A TWENTY-FIRST CENTURY *CITIZENS' POLIS*

A DEMOCRATIC EXPERIMENT IN ELECTRONIC PUBLIC PARTICIPATION IN SCIENCE AND TECHNOLOGY DECISION-MAKING

Using

Mobile Telephones, Risk and Health as a Case Study

SIMON N. WILLIAMS

School of Social Sciences

Cardiff University

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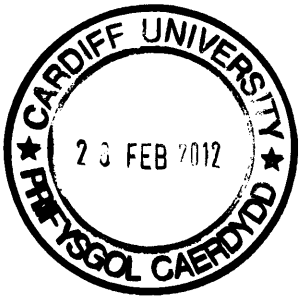

To Mum,

In loving memory. None of this would have been possible without you.

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SUMMARY

This thesis is an original, empirical contribution to the topic of public participation in science and technology (S&T) decision-making. This thesis introduces the Citizens' POLIS (Participatory On-Line Interactive System): an innovative, multi-method, multi-stage, hypermedia process for public participation in S&T decision-making. The purpose of the thesis is twofold: 1. to conduct and describe an *actual* public participation process, and to *present* the results (the participants' decisions) of this process in an accessible format for a wide variety of audiences (including public and policy audiences); 2. To serve also as a piece of social science research, and to *analyse* the results (the participant's deliberation) of this research in a critical manner so as to contribute to academic debates (i.e. for predominately academic audiences). This thesis has been borne of two stimuli: an observation about the limits of the existing literature and a consideration about the philosophical nature of public participation and of social science in general. It has been noted from the literature that there has been, since the early flourish in the 1970s, relatively few examples of public participation process organised, not by government or 'official' bodies, but by university-based social scientists. This thesis is informed by the Pragmatist philosophy of John Dewey. Dewey's Pragmatism has much to offer the study of public participation in S&T decision-making. It places an epistemic emphasis on experimentation; on understanding something through trying something out. As such, the rationale for this thesis is that by organising a public participation process for oneself – i.e. experimenting with it – is the best way to understand what constitutes a 'good' public participation process.

The results of this thesis are trifurcate, split across the substantive, theoretical and methodological. The substantive findings are related to what the citizens thought of the issue, in this case 'mobile telephones, risk and health'. Participants, it was found, were on the whole 'not overly concerned' by this issue. The theoretical findings contribute to academic understanding on prominent Science and Technology Studies (STS) concepts such as 'precaution', 'risk' and 'expertise'. They seek to add a new perspective to our understandings – one provided by an informed and reasoned deliberation among citizens in a designated institutional space. The methodological findings contribute to our understanding of what constitutes a good' participation process – and serves as an empirical evaluation of a social-science led public participation process.

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Chapter 1: Introduction

This thesis, in advocating the importance of orchestrated public participation processes, highlights the limitations inherent in relying on the media as the primary tool through which to engage the public. However, there is no doubting the media's usefulness in bringing new issues to our attention, and also in sparking new research projects into life. My interest in the issue of mobile telecommunications, risk and health (hereafter MTRH) was sparked into life by an intriguing series of newspaper reports in the late 1990s that discussed whether the use of and exposure to mobile telephones could have adverse effects on human health. Most sensational of all these reports was the *Sunday Times'* (4th April 1996) claim that mobile telephones might 'fry' the brain. Across the UK, national newspapers ran a series of headlines claiming that mobile telephones could have a variety of adverse effects.[1]

These media reports stemmed from an emerging body of scientific literature which begun to investigate the possible effects of mobile telephones on human health. The research which at the time received the most attention was Lai and Singh's studies on DNA breakage (Lai and Singh, 1995; 1996). These studies were of concern because of the link between DNA breakage and cancer development. The media attention the public concern it engendered led to the UK government commissioning an 'Independent Expert Group on Mobile Phones (IEGMP)' in 1999. This group, referred to more commonly as the 'Stewart Group' (after its Chair, former Chief Scientific Advisor to Government, Sir William Stewart), was asked to 'consider present concerns about the possible effects from the use of mobile phones, base stations and transmitters'. The Group reported their findings in 2000 (Stewart Report, 2000). More about this Group and its report can be found in Chapter 6.

[1] Some of these headlines were wittier than others (e.g. 'Hello ... it's a mobile peril: mobile phones can damage your health say scientists' (*Daily Mirror*, June 3rd 1996); 'Ear, what's all this fuss about mobile phones? At least 30 million Europeans now use mobile phones – are they frying their heads?' (*The Guardian*, November 14th, 1996); 'Mobile phones are a forgettable experience' (*The Sunday Times*, September 21st, 1997)), whilst others were more to-the-point provocative (e.g. 'Killer menace of the mobile phone' (*The Independent*, May, 24th, 1997); 'Mobile phones are blamed for memory loss' (*Daily Mail*, September 22nd, 1997); 'Using mobiles makes us sick' (*The Mirror*, December 29th, 1997); 'Mobile phones "could be to blame for cancer surge" (*Daily Mail*, January 6th, 1998)).

However, despite continued scientific and media interest in the issue, there was, as of early 2004, very little sociological attention being paid to this issue. In the early stages of this thesis, the issue of MTRH received increasing sociological attention (e.g. Stilgoe 2003 (the latter was published as Stilgoe, 2005; 2007; Moore and Stilgoe, 2009); Burgess, 2004). It was around the same time that debates concerning public participation and engagement in science and technology decision-making were gaining particular currency within Science and Technology Studies (STS).[2] Combining my theoretical interest in public participation with my substantive interest in MTRH, I arrived at a new research aim: a study of public participation in decision-making on the issue of MTRH. The question of why more social scientists hadn't organised their own public participation processes (there existed relatively few examples) led me to consider whether this might be desirable and indeed possible. After having decided to run my own empirical experiment in public participation, the usual logistical issues arose. Traditional participation processes such as the Citizens' Jury or Consensus Conference are often extremely expensive and demanding undertakings. Such an obstacle ensured that some methodological innovation and improvisation was essential. This prompted me to consider deviating from the tradition of organising a participation process face-to-face and instead organising it online. Although this was borne of financial considerations, it allowed me to engage with two further bodies of literature: the study of computer-mediated communication (CMC) (largely confined to social psychology research) and electronic (e-) democracy (largely confined to political science research). I was struck by how there had been little collaboration between these two literatures and in particular how the substantial empirical research in CMC had not been applied to the substantial theoretical work on the possibility of e-democracy, and in particular of electronic public participation. A synthesis of these bodies of literature contributed to the thesis in its current (I refrain from using the term 'final'), evolved form.

Putting these considerations and developments together, my thesis is perhaps best thought of as an *electronic public participation process* on the issue of mobile telephones, risk and health.

[2] It is worth noting that public participation/public engagement is not to say that the two terms are conceptually interchangeable, despite the fact that they are sometimes (mis)taken as such within the STS literature. As Chapter 4 of this thesis will discuss, public participation can be defined as a particular form of public engagement.

1.2. Thesis structure and research questions

The task of this section is to discuss the actual structure of this thesis and therefore familiarise the reader with what can be expected. This 'roadmap' chapter concludes by outlining and summarising the research questions that this thesis seeks to address.

The first thing to be noted is that, although the research questions are presented at the end of this Introduction– in the discussion of Chapters 7-9 – this is not to say that they suddenly emerged at this stage in the research. This thesis in its current guise has four main research questions, and these pertain to the substantive, theoretical and methodological dimensions of the research. Although the research questions developed at various points and at various speeds throughout the life-cycle of this research, for the purposes of this introduction and for reasons of clarity, they will be presented during the discussion of the results chapter to which they most directly apply. The first research question concerns the methodological positioning of this thesis as an empirical experiment in public participation. This research question frames discussion on the different types of public participation (Chapter 4). The second research question concerns the substantive issue of MTRH, and so will be noted below with the overview of the substantive results (Chapter 6). The same applies for the third research question and the theoretical results (Chapter 7) and the fourth research question and methodological results (Chapter 8).

Chapter 2 of this thesis discusses the philosophical and epistemological assumptions upon which this research is based. Although this is ultimately an empirically-focused thesis, it was felt that since it employs a relatively uncommon philosophy, a detailed discussion of this philosophy - worthy of a chapter unto itself - was necessary. Although it is of course firmly an American philosophical tradition, it is surprising nonetheless that Pragmatism has struggled to acquire any significant trans-Atlantic popularity.[3] As such, Chapter 2 has a dual task: firstly, to introduce the central tenets of Pragmatism, and secondly, to discuss how the epistemological approach taken applies specifically to this research and helps to achieve its aims and objectives. Given that the majority of social science theses are based on either of the two most common

[3] A school of French Pragmatism notwithstanding.

epistemological approaches positivism or social constructivsm, there is usually little space dedicated to an elaboration of the central tenets of those approaches (since they are highly familiar to the vast majority). The focus is instead solely on their application to the substantive field of inquiry. There is a need in this thesis however to distinguish Pragmatism, by showing how it is neither positivist nor constructivist. If we think of an epistemological polarity in which extreme relativism occupies the left pole and realism the right pole, then Pragmatism arguably can be situated somewhere left-of-centre. This chapter is split into 3 main sections. The first section discusses the difficulty of giving a universal definition of the term 'Pragmatism' and in so doing identifies the specific variety – i.e. the Deweyan variety - of Pragmatism which has had the most influence on this research. The following two sections then relate Deweyan Pragmatism to research on public participation through a focus on two core tenets of Dewey's philosophy. The second section discusses what is arguably the core tenet of the philosophy (across all the various varieties of Pragmatism) - namely its *consequentialist* conception of knowledge. The third section of Chapter 2 discusses Dewey's main contribution to Pragmatism, namely the *experimentalist* conception of knowledge. It also discusses how Pragmatism's view that all knowledge is partial is different to constructivism's view of all knowledge is relative.[4] The overarching aim of this Chapter is not to argue why Pragmatism could be applied to the implementation and study of public participation processes, but rather to make explicit why Pragmatism, as a philosophy, implicitly embodies both the purpose of public participation processes themselves (as instruments for social inquiry) and their study (as objects of sociological inquiry).

Chapter 3 takes up the idea that public participation processes can be seen as instruments - or institutions – for social inquiry. To do so, it draws both on theoretical works on public participation as well as on Deliberative Democracy theory. In particular, it uses the work of James Bohman (who is himself heavily influenced by the work of Dewey). It explores Bohman's (1998; 1999) pragmatic model of deliberative democracy as 'cooperative social inquiry'. It also takes up Bohman's (1999) appeal for the need to explore 'institutional spaces for deliberation'. The chapter's argument is that public participation processes are examples of such institutional spaces for deliberation.

[4] In this instance, the term 'partial' is used to mean 'unfinshed' and 'always in the making' rather than 'partial' as in biased (i.e. as an antonym of 'impartial').

This thesis presents and discusses the *Citizens' POLIS* (Participatory On-Line Interactive System) - an electronic public participation process which can be thought of, using Bohman's (2004) terms, as an 'institutional "virtual space" for deliberation'. Drawing primarily Bohman's work, but drawing on other significant contributions to Deliberative Democracy theory, the chapter provides a normative analysis of what 'good' deliberation entails. It focuses on the following characteristics of deliberation: the capacity for views to change within deliberation; deliberation as an exchange of *informed* views; deliberation as *cooperative*; deliberation as a *reasoned* exchange of views. These criteria will form the basis of the assessment of the Citizens' POLIS, to be discussed in Chapter 9. The chapter then focuses specifically on electronic forms of deliberative public engagement. After having discussed characteristics of 'good' deliberation in general terms, the chapter concludes with a critique of the benefits and limitations that are to be had from using electronic media to facilitate 'virtual' deliberation.

Chapter 4 turns its attention to discussing what exactly is understood by the term 'public participation'. After distinguishing 'orchestrated public participation processes' from other forms of public engagement, three main types of public participation process are proposed: exogenic (sponsor-led) participation and endogenic (citizen-led) participation, whilst Chapter 5 discusses in detail the Citizens' POLIS as an example of a detailed discussion of one such type. Chapters 4 and 5 therefore relate to what we might conceive as the first and broadest of the thesis' research questions:

Research Question 1: What are the different types of public participation process and is there a role for the social scientist in the organisation of public participation processes?

- *How have existing examples of public participation processes been organised and by whom?*
- *What does the literature tell us about the limitations of these processes and about how these processes should be organised?*
- *What role might there be for the social scientists in the organisatio of npublic participation processes?*

The arguments in this chapter are built on an analysis of public engagement drawn from the Public Understanding of Science (PUS) and Science and Tehcnology Studies (STS) literature. It explains how the Citizens' POLIS is an example of 'orchestrated' or 'invited' public participation, and discusses how such orchestrated or invited processes are a form of democratic practice to be found somewhere between 'organic' political engagement and representative democracy. The second task of this chapter is to classify and categorise different types of orchestrated public participation, according to how and by whom the processes are orchestrated. In discussing the various limitations of the *exogenic* and *endogenic* models, it advocates a third model – *mesogenic* (social science-led) participation. Mesogenic participation is where a process is organised by an agent or agency 'independent' of both the sponsors and the citizens. After critically discussing what it means to be 'independent', it is argued that the university social scientist is well-suited to this task. This chapter identifies itself, and the thesis as a whole as allied to the observed 'normative turn' in STS and to wider debates on the purpose of social science and the role of social scientists in society. The Citizens' POLIS is discussed as an example of the ways in which social science should move away from constructivism and towards normativism.

Chapter 5 gives an account of the methods used in this thesis. Since this thesis is methodologically innovative, substantial space is dedicated to an elaboration of the intricacies of the Citizens' POLIS as a method for public participation. It is important to enote that the methods used in this thesis are of analytical interest *per se.* That is, an assessment of the methods used is an end in itself, as well as the methods being means to an end (i.e. a means of finding out what a group of citizens think about the issue of MTRH). The Citizens' POLIS incorporates a mixture of different social science research methods. As such, the main aim of Chapter 5 is to present and discuss the Citizen's POLIS in terms of its five stages, and the social science research methods and techniques which are essential to its organisation and implementation. This links to previous arguments in Chapters 2 and 3, in which the Citizens' POLIS is discussed as both a form of social inquiry and an object of sociological inquiry. The stages of the Citizens' POLIS which will be discussed are*: the formation of the Ekklesia (Citizens' Assembly); the setting of the agenda; the production of the evidence; the presentation of the evidence; and the staging of the deliberation.*

Chapter 6 discusses in detail the thesis' substantive case study – the mobile telephones, risk and health debate – as well as to some key conceptual themes from within Science and Technology Studies which are relevant to the substantive subject. The discussion of the substantive case study on the one hand uses data collected over the early stages of this research in order to familiarise the reader with the mobile telecommunication technology, risk and health debate before they later read the citizens' views on the subject (see Chapter 7). As discussed in the previous chapter, producing evidence to be considered by the citizens in the Citizens' POLIS involved a preliminary round of data collection by the researcher. This data collection included interviews with key stakeholder in the debate and analysis of relevant documents. The data from the interviews with key stakeholders and experts are presented. Data were summarised and presented under the following five sub-issues: *base stations, biological effects, cancer, electrohypersensitivity and the precautionary principle.* These data are merely presented in order to outline the substantive debate and are not critically analysed to any great extent. As will be noted at various points in the thesis, what is of most significance in the Citizens' POLIS is not the researcher's analysis of the stakeholder data, but rather the citizens' analyses through their deliberation (as well as of course the researchers analysis of the citizens' deliberation). The second half of this chapter analyses and discusses literature from STS. It focuses on three main themes: *risk, precaution and expertise.* These themes emerged from a review of the STS literature on looking specifically at mobile telecommunications technology. Wider discussions within STS pertaining to these themes are then incorporated. The purpose of this chapter is to ground later analysis (Chapter 8), to see whether the citizens' own constructions and representations of these concepts relate to the existing constructions and representations of the concepts in the literature.

Chapters 7, 8 and 9 are the results and discussion chapters. In many respects, Chapter 7 can be thought of as the findings of the Citizens' POLIS *as* a public participation process (a presentation of the citizens' findings), whereas Chapters 8 and 9 can be thought of as the findings of the Citizens' POLIS as a research project *on* a public participation process (a critical discussion of my findings concerning the Citizens' POLIS as an object of sociological inquiry).

Chapter 7 presents the substantive findings of the Citizens' POLIS, in terms of the five main areas of the MTRH debate, as discussed in Chapter 6.1. The aim of this chapter is to present the substantive findings in an accessible manner for a wide range of potential audiences, including interested stakeholders and members of the public as well as academics. There is less critical analysis here than in the following two chapters, with the aim essentially being to show what the citizens' actually said about the issue of MTRH in their deliberation – e.g. whether they felt the technology did pose a risk to health. It should be noted therefore, that in the first research question as outlined below, terms such as 'citizen' and 'risk' are taken *prima facie*.[5] As will be seen, it is the task of later chapters to use the data in order to critically unpick these heavily value-laden terms. For the time being however, Chapter 7 focuses on the first task, which can be summarised through the following question (and sub-questions):

Research Question 2: What are the views of a group of citizen participants on the issue of 'mobile telephones, risk and health' in a public participation process?

- *Do they feel mobile telephones pose a risk to health?*
- *What are their views on the current political and scientific institutional responses to the issue?*

Chapter 8 moves the analysis from a more substantive to a more theoretical dimension. It discusses the theoretical findings of the thesis, which relate to the three main STS conceptual themes as also discussed in Chapter 6. The aim here is to look at whether and how the citizens' representations of these concepts differ from existing representations within the literature. It seeks therefore to critically analyse the theoretical concepts which underlie the findings in Chapter 7. The second aim of this thesis then can be summarised through the following research question (and sub-question):

Research Question 3: How are the key concepts of 'risk', 'precaution' and expertise' represented by the participants in the public participation process?

[5] By this, I mean that they are used as they would be in everyday parlance. The aim here is not for us as analysts to sociologically interpret our actors' language, but rather more simply to present it. Collins (2008) distinguishes between actors' and analysts' categories (but notes there is sometimes difficulty in distinguishing where the former ends and the latter begins).

- *How do the constitutions of these concepts in the public participation process relate to existing 'public' constitutions of these concepts, as reflected in the literature (i.e. Does the constitution of these concepts differ in a deliberative environment as compared to a non-deliberative environment (as reflected in the literature)).*

Chapter 9 contains what might be referred to as the methodological results. It includes an assessment of the Citizens' as an orchestrated public participation process and essentially seeks to explore the extent to which it can be considered effective. This chapter seeks to assess whether the Citizens' POLIS met the criteria of 'good' deliberation, as outlined in Chapter 3. The third and final aim of this thesis can be summarised through the following research question (and sub-questions):

Research Question 4: Is the Citizens' POLIS effective as a public participation process in general, and what can it tell us about the place and potential of electronic public participation processes?

- *Does the Citizens' POLIS produce 'good' deliberation, as according to a number of assessment criteria derived from the theoretical literature?*
- *What can the Citizens' POLIS tell us about the features and possibilities of electronic public participation?*

Chapter 10 is the final concluding chapter, and seeks to draw together what has been learned from the experience of the Citizen's POLIS.

1.3. A note on the scope of this thesis and its limitations

It is felt that a note on the limitations of the scope of this thesis is necessary. Despite there being many avenues of analysis and discussion which I would have liked to have explored, the inevitable spatial constraints curtailed what could otherwise have been included.

There are two main gaps in the thesis; issues which were omitted because they did not directly relate to the research questions as stated in the previous section. Firstly, the reader will note that the research questions and the results chapters do not include any

cross-national comparisons of the Swedish and British participants' views. The potential of the Citizens' POLIS to foster cross-national deliberation will be discussed (see Chapter 3.3). However, empirical analysis of the data did not include a comparison of the views of Swedish and British citizen participants. It is worth mentioning perhaps that, during the qualitative analysis procedure, no significant differences 'jumped out' at the researcher. Nevertheless the lack of a detailed empirically-informed comparative analysis of the citizens' views is acknowledged as being a limitation of the scope of this thesis. It is the researcher's intention that future Citizens' POLISs will include such comparative analyses. Secondly, another line of analysis which may appear conspicuous by its absence is a detailed discussion on the participants' views of the different media used. As well as broaching the subject voluntarily, the participants were asked on a few occasions by the moderator what they thought of the different media used to present the information to them (see Chapter 5.4) and whether and how they felt this affected their interpretations and discussions of the issue. This question prompted some interesting responses which are certainly worthy of analysis. However, it was decided that this analysis would not feature in the thesis for the simple reason that it was felt there was insufficient space to develop it. As noted in Chapter 1, one of the main motivations for this research stemmed from my observation that there was a general lack of involvement of academic social scientists in the *organisation* of public participation processes – online or offline. Subsequently, it was felt that, as an empirical study on the organisation of social-science led public participation processes (see Chapter 4), this thesis contributes to understanding of public participation in general and not only to electronic public participation. That said, the thesis does contain a theoretical discussion of the values of using multimedia and hypermedia in participation processes, and in social research in general (see Chapter 5.4.1). Furthermore, a results section is dedicated to the discussion of the advantages and disadvantages of electronic participation (see Chapter 9.5.).

There is one further aspect of this thesis which, due to spatial constraints, although not omitted, is somewhat underdeveloped. Although there is extensive discussion of the benefits and limitations of using CMC to facilitate public participation, this is considered a secondary aim of the thesis. This aim is secondary to the aim of designing a public participation process based on the mesogenic model, as outlined in Chapter 4. Mesogenic processes of course do not necessarily need to take place virtually.

Nevertheless, discussion in Chapter 9 does include a reflection of the Citizens' POLIS as an electronically-mediated mesogenic participation process. Moreover, precisely because the Citizens' POLIS relied on CMC, the data obtained might be considered lighter and less dense than data acquired from face-to-face communication. As such, discussion of the citizens' deliberations relied on data which, although more 'to-the-point' and no less insightful, were not as thick or rich as other forms of talk (see Chapter 3.3.).

Despite these limitations, it is important to point out that these possible areas of further discussion, despite being deemed beyond the scope of this thesis, do provide potential for follow-up, post-doctoral research.

Having outlined this structure of this thesis, having summarised its research questions and having identified the limitations in its scope, nothing remains except to begin the presentation, discussion and analysis of *A Twenty First Century Citizens' POLIS.*

Chapter 2: Public participation processes as instruments for social inquiry and objects of sociological inquiry

The purpose of this chapter is to introduce the philosophical and epistemological foundations of this thesis. The philosophical 'approach' that is taken, and which is used to guide the organisation and analysis of the Citizens' POLIS, is (American) Pragmatism. In particular, this thesis is influenced by the branch of Pragmatism associated with John Dewey, and its application in the works of James Bohman (the latter will be discussed in more detail in Chapter 3). In keeping with our discussion in Chapter 1, another structural feature of this thesis which is worth emphasising is that despite being an empirical study it dedicates a whole chapter to philosophical and epistemological discussion. It is felt that a whole chapter is necessary for two reasons: Firstly, because Pragmatism, as a philosophical 'attitude' has acquired comparatively little support outside of the United States, it is perhaps more necessary than usual to explain in detail the implications of this philosophy. Secondly, given that, as will be discussed in Chapters 4 and 5, the researcher plays an integral role in the organisation of the Citizens' POLIS, it is necessary for the researcher's epistemological assumptions to be made explicit. This will help to clarify the epistemological assumptions underlying the Citizens' POLIS as a participation process.

It is important to introduce here the idea that the Citizens' POLIS is both an instrument for *social* inquiry - insofar as the participants are being asked to deliberatively explore an issue - and an object of *sociological* inquiry - insofar as the researcher is in turn analytically exploring the participants' deliberations. This idea will be developed in more detail in Chapter 3, mainly through the work of the deliberative democracy theorist James Bohman. For the time being however, it is sufficient to note that before either type of inquiry can be discussed, it is important to elucidate the epistemological assumptions upon which they are based.

2.1. What's in a name?

It may not have gone unnoticed that a number of different adjectives have already been used to describe Pragmatism. Indeed, looking to the Pragmatist literature itself, it is

difficult to discern whether Pragmatism is best described as a philosophical 'movement' (Thayer, 1970) or 'attitude' (Scheffler, 1974), or more fundamentally whether Pragmatism is indeed a specific approach to philosophy or a broad form of hermeneutics (Rorty, 1999), or indeed whether it is all of these things. Lovejoy (1908) claimed that there were 13 different varieties of pragmatism.[6] Hammersley (2001: 104) notes that, because the pragmatists themselves pragmatism suggest that their philosophical approach is neither a form of realism or idealism, its epistemological position is inherently uncertain. This uncertainty notwithstanding, it is possible to categorise these varieties according to the extent to which they are more or less relativist. Pragmatism at its most relativist – or rather at its least objectivist - manifest's itself in Rorty and particularly his *Philosophy and the Mirror of Nature* (1979).[7] In *The Mirror of Nature,* Rorty argued that there is a need to dissolve the objectivism/subjectivism dichotomy. However, in arguing that this debate over epistemology is itself a Wittgensteinian 'language game' and in suggesting that epistemology should be replaced with hermeneutics (Rorty, 1979), Rorty's work resonates with relativism's anti-foundationalism.[8] Pragmatism at its least relativist is to be found in the work of Peirce (1878). Peirce's pragmatism, unlike Rorty's, relies on a belief in the existence of an underlying reality which is independent of our interpretations of it. Peirce is seen to work with an absolute conception of the truth, a conception which is ultimately consensual (Scheffler, 1978).

As such, when using Pragmatism, it is necessary to acknowledge which particular 'variety' of Pragmatism is being used. This thesis uses primarily the Pragmatism of John Dewey since it is his work, more than any other Pragmatist's, which most closely relates to, and impacts on, democratic theory (most notably *The Public and Its Problems* (Dewey, 1991/1927). Dewey's pragmatism can be located somewhere between the hermeneutics of Rorty and the scientific realism of Peirce. Dewey took from Peirce an

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[6] Schiller however goes further in claiming that 'there are as many pragmatisms as pragmatists'.

[7] The work of William James (1904; 1907; 1974) should also be considered a variety of pragmatism with more relativist tendencies.

[8] Gadamer's Truth and Method rejects as unachievable the goal of objectivity, and instead suggests that meaning is created through intersubjective communication.
For him, "true" is simply an honorific knowers bestow on claims, asserting them as what "we" want to say about a particular matter.
We employ words, not as an attempt to represent the intrinsic nature of our environment, but rather as tools to deal with that environment (Rorty, 1999: xxiii). Hermeneutic deliberation then, is merely a conversation of how best we are to cope with our world.

emphasis on the need for experimentation and from James the idea that truth is partial and is always evolving (or 'in the making'; see Chapter 2.2.2.). Dewey's epistemology is not as relativist as are some of the more extreme forms of social constructivism, since it does not imply that there are multiple co-existing truths which are as equally valid as each another. Rather, although absolute truth is something to which we can aspire, since it cannot ever be achieved, we must base our inquiry on a partial and 'unfinished' truth. This will be discussed further in the following sections.

2.2. Dewey's Pragmatism

The polymath John Dewey was professor of Philosophy at the Universities of Chicago and Columbia and a President of both the American Philosophical Association and the American Psychological Society. He is widely regarded as one of the most prolific and eminent American scholars of the first half of the twentieth century. His writings were vast, cast widely across the disciplines of psychology and education, and as noted above, included a foray into political theory, via the publication of *The Public and Its Problems* (Dewey, 1991/1927). It is in this seminal work that Dewey outlines what he sees as the meaning and implications of concepts such as 'the public', 'the state', 'government' and 'democracy' (Dewey, 1991/1927). The gravamen of *The Public and Its Problems* is that although industrialsation and technological innovation have led, negatively to a a more individuated society, it is possible to retain hope that further development – *so long as it is guided by public discussion* - can lead to an improved political state, one that is more public and less.

For Dewey, a public 'sparks into life' by its very engagement with one of these negative consequences or 'issues'. From within STS, Marres (2007) has discussed the important role an issue plays in bringing a public into existence (see also, Latour and Weibel, 2005). Taking this view, we might suggest that our public – in this case the participants in the Citizens' POLIS - has indeed only been brought into existence as a result of their engagement with an issue (here MTRH). Of course – and as will be discussed in Chapter 5 - the participants were chosen so as to be as representative as possible of much larger publics – namely the UK and Swedish populations. In this sense the Citizens' POLIS might be considered simultaneously a group which is (as)

representative (as possible) of larger publics (the UK and Sweden), whilst at the same time constituting a public in itself – in that it develops around an issue (MTRH). Although as will be discussed in Chapter 4, orchestrated public participation processes are not 'organic' forms of public engagement, they are nevertheless examples of how bringing otherwise disparate individuals together as a group of citizens in order to purposefully discuss a given (S&T) issue can create – or 'spark into life' - just that – a group of citizens. Chapter 4 will identify some considerations and possible problems with the various types of public participation processes, including their possible lack of genuine legitimacy and their possible lack of instrumental effectivness (see also: Williams, 2009). We will also return to disucssing how participation can facilitate a sense of civic identity, duty and pride in Chapters 3.2.3. and 9.3. which discusses the capacity of a public participation process to foster cooperative inquiry.

Also explicated in *The Public and Its Problems* are the epistemological assumptions that underlie Dewey's theories. Dewey's epistemology can be summarised under two related epistemological tenets: *consequentialism* and *experimentalism.* These two tenets will be discussed in turn. The first section will look at how Pragmatism is a useful means of understanding the social inquiry which participants themselves perform (via their deliberation) *within* the Citizens' POLIS. This section will argue that the Citizens' POLIS, as a participation process, is in itself a form of pragmatic inquiry. The second section will look at how Pragmatism is a useful way of understanding the sociological inquiry which the researcher is performing *with* the Citizens' POLIS. This section will argue that the Citizens' POLIS is an example of a pragmatic experiment in public participation, the value of which is revealed in the researcher's analysis of it.

2.2.1. Consequentialism

Despite the existence of different varieties of Pragmatism, in order to be considered Pragmatist, it is necessary to take a *consequentialist* view of knowledge. Consequentialism is defined as being a conception of knowledge in which the object of our inquiry is given meaning and substance through our consideration of the possible effects (i.e. consequences) of that object (and our engagement with it). This 'pragmatic maxim' is best understood through its original formulation, by C. S. Pierce (1878: 293):

> ... We are to '[c]onsider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object'.

It also features prominently in Dewey's writings:

> Pragmatism ...does not depend upon antecedent phenomena but upon consequent phenomena; not upon the precedents but upon the possibilities of action (Dewey, cited in Thayer, 1970: 32-3)

> Ideas are statements not of what is or has been but of acts to be performed ... intellectually ... ideas are worthless except as they pass into actions which rearrange and reconstruct in some way, be it little or large, the world in which we live (Dewey, 1929: 138).

> ... the proper interpretation of 'pragmatic' [is] namely the function of consequences as necessary tests of the validity of propositions (Dewey, cited in Jackson, 2006: 59)

As suggested by Peirce (above), our knowledge of something - that is, the object of our conception - is dependent on our consideration of all the possible future effects of that object and the *practical* consequences which the effects of our conception of that object might hold for us. Knowledge for the Pragmatist must be practical, but is it also both prospective and provisional. As Dewey suggests, ideas are worthless if they do not become actions which in some way influence practically the world in which we live. However, since ideas are merely propositions – i.e. 'statements of acts *to be* performed' - their validity can only be ascertained once the consequences of these propositions become manifest – i.e. once those acts *have been* performed. Knowledge therefore entails the consideration of possible future consequences of possible alternate courses of action. Since, we cannot however know for certain something which exists in the future, knowledge at any given time must therefore be considered provisional. The implications of this will be discussed in more detail in the following section.

It is to be emphasised of course, that our knowledge in the present is based on and derived from the manifest consequences of past objects and their effects. These are however, always subject to change according to future consequences of the effects of future conceptions of an object. Knowledge is therefore not only provisional, but

(validated) knowledge is also prospective (i.e. it is dependent on the possible consequences of future actions).

In order to further understand the implications of the pragmatic maxim, it is useful to look to a statement made by William James (1904: 673), whose work had a great influence on Dewey:

> '[t]he ultimate test for us [pragmatists] of what a truth means is indeed the conduct it dictates or inspires ... the effective meaning of any philosophic proposition can always be brought down to some particular consequence, in our future practical experience'.

As James suggests, a belief *becomes* true –that is, it becomes knowledge - when the events and actions which are a result of the existence of that belief serve to validate the existence of that belief. However, because it sees validated knowledge (in James' words, the 'effective meaning' of something) as always provisional and 'in our future practical experience', Pragmatism has not been without its fair share of criticism (Russell, 1919; Moore, 1922). The question justifiably asked of the Pragmatists is: how is it possible to make choices based on knowledge when knowledge can only be verified once the consequences of acting on our choice are manifest? In this section, the aim is to discuss not why Pragmatism is the 'best' approach to participatory decision-making, but rather why participatory decision-making (specifically in areas in which scientific knowledge is uncertain) is by its very nature a Pragmatic form of 'social inquiry' (cf. Bohman, 1999; see also Chapter 3).

In areas of S&T policymaking where scientific knowledge is certain, decision-makers are expected to make decisions which are based on this certain scientific knowledge. This is problematic when the speed of political decision-making is faster than the speed of scientific consensus-formation (Collins and Evans, 2002: 269). Policymakers rarely have the luxury of being able to wait until scientists agree over what the correct course of action should be, firmly grounded in well-established scientific evidence. The former, unlike the latter, are not bound by the time-consuming 'quality-control' mechanisms like the peer-review, A contemporary example might be recent smoking regulations in the UK (and elsewhere). Because it is now an agreed-upon scientific fact that passive

smoking poses serious health risks, any policy actions taken can be predicated on the likely – i.e. scientifically certain - consequences of taking such actions. In this case, there was increasing pressure on the UK government to pass legislation which banned smoking in public areas. The justification for such a policy was that this ban would lead to a decrease in exposure to passive smoking, which in turn would contribute to a decrease in incidences of lung cancer (and other passive smoking-related diseases). Of course there was also a normative dimension to this policy, namely whether non-smokers *should* have to be exposed to second-hand smoke in public areas, or whether smokers *should* be allowed to smoke in public areas if they wish to. The point to be made here is that the normative dilemma of whether smoking in public areas *should* be allowed was made (considerably) easier by virtue of the fact scientific consensus suggested that the consequences of doing so would be positive, (because it is certain that passive smoking does pose serious health risks).

In areas of S&T policymaking where scientific knowledge is uncertain (i.e. in the absence of a consensus), decision-makers do not enjoy the luxury of justifying their policies in terms of scientific certainty. The substantive topic of this thesis – MTRH –is one such example. The content and implications of this debate will be introduced in Chapter 6.1. However, here it is sufficient to note that scientific knowledge on the issue is uncertain, since scientists do not (yet) know whether or not the use of, or exposure to, this technology poses any significant risks to health. Concurrently, the growth of mobile telecommunication technology has clearly been seen to have had a number of socio-cultural benefits. As such, we are faced with a normative dilemma of whether we *should* develop and use the technology. This normative dilemma has no consensual scientific knowledge of the possible risks to health upon which to base our decisions. If, as in the case of passive smoking, science –was certain in its conclusions that there *were* serious risks to health, then no doubt our decision would be to either not develop or use the technology or, most likely, to develop and use it differently so as to remove or attenuate these risks. If, on the other hand, scientists could be certain that the there *were not* any serious risks to health, then no doubt we would happily continue to develop and use the technology with little or no concern for our health. Since however, scientific knowledge is not certain in either direction, the normative dilemma stated above can be based only on a consideration of these uncertainties, or on *possibilities.* It is possible that continued, long-term use of the technology will cause a significant

increase in the incidences of certain cancers (see Chapter 6.1). It is however also possible that continued, long-term use of the technology will not cause any significant increase in the incidences of certain cancers. At the same time, the possible scenarios of changing the patterns of development and use of the technology must also be taken into consideration.

All in all, the dilemma over making policy on MTRH is far more complex than the dilemma over making policy on passive smoking, risk and health. In the former, the dilemma is (presently) more normative and more political than it is technical, at least in comparison to the latter. This has two implications. Firstly, it is because the issue is scientifically uncertain, and has an explicitly normative dimension to it which makes it highly amenable to participatory decision-making. This point relates to a growing corpus of research in STS –as exemplified by Funtowitcz and Ravetz's (1993) 'post-normal science thesis – and will be elaborated on elsewhere in this thesis (see Chapter 4). Secondly, and the essential point being made in this section, is that the social inquiry into an issue which is scientifically uncertain, such as that taking place within the Citizens' POLIS (and other such participation processes), is necessarily a form of Pragmatic social inquiry. Any process of decision-making in areas in which scientific knowledge is uncertain can be seen as being Pragmatic, precisely because it entails a consideration of all the *possible* future consequences of possible courses of action. Decision-making in areas of scientific uncertainty is therefore by its very nature prospective. To illustrate this, we can return to the interpretations of the pragmatic maxim, as given above. If we are to think of a decision about an issue as our 'conception of an object', then along with Pierce (1878), making a decision must require us to '[c]onsider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have'. Simply put, making a decision must consider not only known consequences of past actions, but the hypothetical consideration of future consequences, of 'acts to be performed' (Dewey, 1929: 138). If we are to agree with James (1904), what is important is not so much our conception of an object – i.e. 'the decision' - *per se,* but rather the conduct which it dictates or inspires. In other words, whether a decision is deemed the 'right' decision is based on the way we act in accordance with that decision. Moreover, whether a decision is 'right' or not – i.e. the *validation* of the decision lies in its future consequences. A useful, if rather extreme, example here might be that of global climate change.

Although this is an area of science which is characteristically uncertain, consideration of the possible future consequences of courses of action ensure that we act in a certain way. That is, in deciding how best to prevent the predicted negative consequences of climate change (global warming) we take certain actions (e.g. we stop using certain chemicals and substances). However, whether such actions prove to be successful and are thereby validated is something which can only be known in the future.

The role of known consequences of past actions in informing decisions regarding future courses of action will be discussed in subsequent sections of this chapter. However, to summarise the usefulness of Pragmatism to the organisation of a public participation process, we can simply look at what exactly such processes entail. In participation processes, citizens deliberate in order to make decisions. Due to the scientific uncertainty of the issue, there are many possible courses of action which might be taken in any given decision. Making a decision therefore entails choosing, through deliberation, one of these possible courses of action. Therefore, deliberation can be thought of as the reasoned consideration of possible consequences of possible alternate courses of action. In this respect, deliberation is thoroughly Pragmatic.

2.2.2. Experimentalism

It was suggested in the previous chapter that due to Pragmatism's emphasis on future consequences, knowledge for the Pragmatist is necessarily provisional. As Scheffler (1974: 8) summarises, all knowledge is 'incapable of absolute fixity or absolute certainty'. Or, as Dewey (1931, reprinted in Thayer, 1970: 32-3), building on a definition of Pragmatism given earlier, eloquently puts it:

> Pragmatism ...does not depend upon antecedent phenomena but upon consequent phenomena; not upon the precedents but upon the possibilities of action ... this taking into account of the future takes us to the conception of a universe whose evolution is not finished, of a universe which is still, in James' term, 'in the making,' ... up to a certain point still plastic.

As is evident from the above citation, Darwin's work on the theory of evolution, which had gained wide currency by the late nineteenth century, was very influential for the classic Pragmatists. Borrowing Darwinian concepts and terminology, pragmatists like

James and Dewey suggested that the world, and therefore our knowledge of the world, is constantly evolving. Knowledge is in this sense *polymeric* – it is 'plastic', never finished. Whatever we know at any given point in time is subject to change based on the possibilities of future knowledge, something which was introduced in the previous section, when discussing the importance of taking into consideration possible future consequences (of possible courses of action).[9]

Whilst our conception of an object can never be entirely 'finished', it is however possible to gradually work towards 'more useful' understandings of that object. The way in which this is achieved is through *experience* and through *experiment.* Recurrent in Dewey's writings is an emphasis on the *experiential* and *experimental* nature of knowledge (e.g. Dewey, 1929; 1963). Before discussing this in more depth, it is first necessary to elaborate on what exactly Dewey's conception of the term 'experiment' entails.

As his pedagogic experiments attest (e.g. Dewey, 1963), Dewey was a firm believer that knowledge is acquired through actually 'doing something'. Our conception of an object is therefore tied to our experience of or with that object. Naturally, the idea that knowledge is grounded empirically in experience is neither new nor unique to the Pragmatists. Indeed, the origins of this idea have their roots in the Enlightenment and in the scientific principle of *experimentation.* This, it is to be noted, is not something which the Pragmatists deny. Rather it is something which is actively acknowledged,

[9] This of course brings to mind the work of Karl Popper and his notion of falsification. Popper's philosophy of science, most notably espoused in his *The Logic of Scientific Discovery* (Popper, 1959), sought to address the 'problem of induction', as previously formulated by Hume. Popper's famous argument needs little explication, but is essentially based on the premise that it is never possible to positively verify the existence of a given object. In this respect he contested the logical positivism of the logical positivists. No matter how many observations of a given object one has made in the past, one can never guarantee, philosophically, that the same observation can and will be made in the future. Popper's philosophical innovation was to propose that we can however negatively verify the non-existence of a given object. This he termed falsification. His argument was most famously exemplified using the case of the black swan: Although we cannot, upon the observation of *n* white swans, claim that 'all swans are white', upon the observation of a single back swan we *can* claim that 'not all swans are white'. For Popper, deduction rather than induction was the primary form of logic guiding scientific investigation - including social scientific investigation. However, it is important to emphasise the epistemological distinctions between Popper and the Pragmatists. Philosophically we might see Popper as an arch-positivist. His philosophy was built from the assumption that there was a single ontological reality and importantly that it was, in theory at least, possible to *eventually* arrive at this reality via falsificationism. As suggested above however, epistemologically, the Pragmatists believed that knowledge was never finished; we never completely arrive at a 'final' conception of truth, since such a thing does not exist (or rather cannot be arrived at). As we shall see below, the Pragmatists do believe in positive verification, but are not sufficiently naive so as to argue that experimental verification can reveal the true existence of something. Rather, as we shall see, verification reveals the existence of the normative usefulness of something.

embraced even. As James (1907) suggests, pragmatism was the 'new name' under which 'some old ways of thinking' were extended and explored. For the Pragmatists, the scientific method could and should be applied to the socio-political as well as the natural: '[P]olicies and proposals for *social* action [are to be] treated as working hypotheses, not as programmes to be rigidly adhered to and executed' (Dewey, 1991/1927: 202-3). Social scientific knowledge, like natural scientific knowledge, is produced experimentally; incrementally and through a problem-solving approach.

If Pragmatism is, epistemologically speaking, experimentalist, one might justifiably ask how pragmatism differs from those philosophies which are positivist and which also place their faith in the ability of the experimental method to uncover social truths. We might respond to this question in two respects. Firstly, there is a difference in how the term 'experiment' is understood and defined. Secondly, there is a difference in the status of the knowledge to which those methods are directed.

Firstly, it is important to point out that when Dewey uses the term 'experiment' he does not (necessarily) have in mind the type of complex and well-defined, strictly-controlled experiment which has today become almost synonymous with 'scientific research'. The Deweyan experiment does not (necessarily) entail features such as randomization, double-blinding and so on. Rather, a Deweyan experiment is both broader and simpler. It means, in the literal definition of the term, to 'try out' (from the Latin *ex-periri*). Simply put, Pragmatic experimentalism simply means finding something out (i.e. acquiring knowledge) through trying something out. It entails 'an active, interventionist model of knowing, as a substitute for spectator epistemology' (MacGilvray, 1999: 545).

Secondly, most positivist social science is founded on an unproblematic conception of ontological realism. That is, it accords the objects of its inquiries with an absolute social reality, much in the same way that natural science accords the object of its inquiries with an absolute natural reality. It is believed that the best way to arrive at this absolute social reality is through the correct application of the scientific method. That is, the scientific method can uncover 'the Truth'. For Dewey (1916) however, reality is 'practical' and truth is experimental. MacGilvray (1999: 545) nicely summaries Pragmatism's experimental epistemology, and ties it also to its consequentialism (as discussed above):

> [Pragmatism] substitutes for the subject/object and realist/idealist divides an experimental conception of truth: Those things are true which are verified through transaction with nature; that is, through experience. Verification in turn is defined in terms of usefulness: A proposition may be said to be verified if it serves as a useful guide to future conduct.

Dewey's epistemology then sees truth itself as something which is rooted in experience (in the 'transaction with nature'), which means it can neither be arrived at through thought alone (cf. Dewey's view, cited in the previous section that 'ideas are worthless except as they pass into actions') nor can it be fully 'realised' in an objective sense. Pragmatism as an epistemology is an inquiry into truth, into knowing. This inquiry is oriented to experience - experience which can not only validate prior choices and propositions, but which can also justify future choices and propositions. In other words, experience serves as a useful guide to future conduct.

The main aim of this section is indeed to discuss Pragmatic experimentalism in terms of it being a 'useful guide to future conduct' in the context of public participation processes. It was suggested in the preceding section that Pragmatism's consequentialism allows for it to be seen as the underlying epistemology for public participation processes (as decision-making procedures which entail a consideration of the consequences of possible future courses of action). Citizens in public participation processes are responsible for making decisions on an issue. These decisions which are usually normative often address questions such as: what should we (i.e. society) do about an issue? In this respect the citizens are performing pragmatic inquiry insofar as they are reflecting on existing knowledge about an issue and are being asked to consider possible future consequences of any changes made in regard to that issue. In this sense, the aim of the citizens' decisions is (or rather should be) to 'serve as useful guides to future conduct'.

It can be also argued however, that public participation processes, as subjects of sociological inquiry are also a type of experiment. On the broadest level, political democracy *per se* is, for Dewey (1991/1927: 98), the product of (political) experimentation:

> Political forms do not originate in a once and for all way. The greatest change once it is accomplished is simply the outcome of a vast series of adaptations and responsive accommodations, each to its own particular situation... Political democracy has emerged out of a kind of net consequence of a vast multitude of responsive adjustments to a vast number of situations, no two of which were alike, but which tended to converge to a common outcome. ... the unity of the democratic movement is found in effort to remedy the evils experienced in consequence of prior political institutions realizes that it produced step by step, and that each step was taken without foreknowledge of any ultimate result.

Dewey argues that democracy has settled in many societies, not because of any normative theoretical justification of its legitimacy, but rather because society has adapted stepwise to the negative consequences ('evils') of previous political systems, in order to retrospectively verify it as the best out of a set of possible alternatives. This resonates (albeit more optimistically and less sardonically) with the Churchillian maxim that 'democracy is the worst form of government ... except for all the others that have been tried!'

On a smaller scale, public participation processes can be seen as experiments in deliberative democracy. They are experiments insofar as experience of conducting a participation processes can inform future experience in this regard (again, this can 'serve as a useful guide to future conduct'). The Citizens' POLIS therefore can be thought of as an experiment in public participation. As will be discussed in more detail in the following chapter, a significant amount of the literature on public participation and deliberative democracy looks at the issue of evaluation – i.e. it seeks to determine what constitutes a 'good' public participation process. The chapter proposes a few (among many possible) normative criteria by which to assess what makes a 'good' participation process. Whilst normative criteria are important as a basis for comparison and a means for standardising evaluation across different public participation processes, they would of course be useless were there no actual participation processes to evaluate. Just as normative criteria can be used to 'test' empirical phenomena (in this case a public participation process), so too can they be simultaneously 'tested' by those empirical phenomena. As noted by Rowe (2009) and Pidgeon (2009) evaluative criteria are subject to change. What is important is that for normative criteria to be useful, they need to be applied, and for this to be possible it is necessary to have empirical *experience* of public participation processes. Again, to cite Dewey (1991/1927: 217):

> We have said that consideration of this particular condition of the generation of democratic communities and an articulate democratic public carries us beyond the question of intellectual method into that of practical procedure (Dewey, 1991: 217)

Understanding what constitutes a 'good' public participation process is therefore a process which relates to theory ('intellectual method') but which is rooted in empiricism ('practical procedure').

It is to be acknowledged that advocates of a system of deliberative democracy (something that will be discussed in more depth in Chapter 3) do acknowledge that despite the attraction of 'ideal' processes, in actuality, practical attempts at institutionalising them will likely fall short of this ideal. As Cohen (1997a) concedes, in practice, deliberative procedures are likely to mount only to 'imperfect approximations' of the ideal. The more practical experience we have of these procedures, the more these approximations can draw closer to the ideal. In making such a concession, most (proceduralist) theorists advocate what might be seen as an experimental approach to public participation. Processes can be improved through 'trial and error'. Taking a Pragmatic, experimental approach to public participation– one grounded in practical procedure – allows us to determine what constitutes a 'good' participation process. This cannot be done through abstract, *a priori* (i.e. untested) normative criteria alone.

The design of the Citizens' POLIS was heavily influenced by the outcomes of previous 'experiments' with public participation, such as the citizens' jury and the consensus conference (see Chapter 5). It was also guided by normative criteria derived from evaluations of previous participation processes (e.g. Rowe & Frewer, 2000). Finally, to be considered Pragmatic, a public participation process must also be guided by a consideration for the future practical impacts (i.e. consequences) it might have. It is hoped of course that as well as having some short-term intrinsic value, the Citizens' POLIS will also have some longer-term value for future public participation processes. It is hoped that the substantive results of the Citizens' POLIS on MTRH will be of use to policy, stakeholders and interested publics alike. This project was conceived, designed and implemented with its possible impacts and possible users borne in mind. Whether it has its intended impacts and proves to be of use to its intended 'users' of

course remains to be seen. This can only be confirmed *a posteriori,* after the event. However, another implication of this project, and one which is possibly more important still, is that it will prove to be of use to our understanding of public participation processes in general. Just as this project took into consideration the experience of others in designing and implementing a public participation process, it is hoped that the experience gained here from designing and implementing the Citizens' POLIS will prove to be useful for others who wish to undertake similar projects in the future. It is fully acknowledged that the Citizens POLIS, as a method, is not 'finished'; it is not the perfect or 'ideal' public participation process. In reality, as the Pragmatists have argued, nothing of the sort exists. The important point is that in *experimenting* with public participation (as is done in this project) we can work towards processes which can be considered effective, according to existing normative criteria (which are themselves rooted in past experience, and which can be modified in light of new experience).

Chapter 3: What makes a 'good' public participation process?

Chapter 2 discussed the philosophical roots of this thesis. It was noted from the start that Pragmatism is a complex 'approach' which, depending on which Pragmatist(s) one chooses to follow, can be interpreted differently and can be seen to consist of different characteristic features. As such, it was emphasised that thesis would focus on the Deweyan 'variety' of Pragmatism, and in particular on its characteristic features of consequentialism and experimentalism. This chapter draws both on theoretical works on public participation as well as on Deliberative Democracy theory. In particular, it uses the work of James Bohman (who is himself heavily influenced by the work of Dewey). It explores Bohman's pragmatic model of deliberative democracy as 'cooperative social inquiry'. It also takes up Bohman's (1999) appeal for the need to explore 'institutional spaces for deliberation'. The chapter's argument is that public participation processes are examples of such institutional spaces for deliberation. This thesis presents and discusses the Citizens' - an electronic public participation process which can be thought of as an 'institutional "virtual space" for deliberation'. Using primarily Bohman's work, but drawing on other significant contributions to Deliberative Democracy theory, the chapter provides a normative analysis of what 'good' deliberation entails. Much like the previous chapter, there are a number of different interpretations or varieties of what is generically referred to as 'deliberative democracy'. Just as (at least) a whole thesis could be dedicated to a discussion of the various interpretations of Pragmatism, so too could (at least) a whole thesis be dedicated to a discussion of the various interpretations of deliberative democracy. As such, it is important to bear in mind that this chapter, much like the previous chapter, discusses only that strand and those features of deliberative democracy which have had the most influence on this research. It is fully acknowledged that the version of deliberative democracy presented here is neither comprehensive nor definitive. It is however, one possible interpretation of deliberative democracy, and the features discussed here are, in the researcher's opinion (from his reading of the literature) the most salient.

As noted in Chapter 1, and as developed in Chapter 2, one of the central aims of this thesis is to design, implement and then empirically *test* a public participation process. To recap, a Pragmatist approach to sociological inquiry must necessarily involve to

some extent the empirical 'testing' of ideas – that is, some form of practical experimentation. Now, as was also noted in Chapter 2, a Deweyan experiment is far 'looser' and less-defined than the type of controlled experiment we have become familiar with in modern research. Nevertheless, an experiment by definition is the 'testing' of a theory or theories. If a research project fails to investigate and test a theory or theories in some way, then that research project can scarcely be referred to as an experiment (even in the 'loose' Deweyan sense of the term). The aim in this research project is to test whether the Citizens' POLIS 'works' as a public participation process. In order to do this, it is necessary to test it according to a theory or theories related to public participation, which is where deliberative democracy theory comes in. As such, the characteristic features which are outlined in this chapter are the theories against which the data from the Citizens' POLIS will be tested – in Chapter 9 - in order to determine whether the latter 'worked' as a public participation process.

The link between Pragmatism and deliberative democracy has most thoroughly been explored by James Bohman,. It is Bohman's interpretation of deliberative democracy which has had the most influence on this thesis. Drawing mainly from Bohman's work, but also from the work of some of his contemporaries, the following four characteristic features of deliberative democracy have been identified as being most salient: the capacity of deliberation to *change* citizens' views' the capacity of deliberation to *inform* citizens' views; the capacity of deliberation to be *cooperative;* the capacity of deliberation to be *reasoned.* These capacities will form the criteria by which to assess what makes for a 'good' participation process. These criteria will be discussed as theoretical assessment criteria, before being applied empirically to the Citizens' POLIS on MTRH (see Chapter 9). First however, a brief introduction to the development of deliberative democracy within the social and political sciences should prove useful.

3.1. The 'Deliberative Turn' and Bohman's model of democracy as social inquiry

> Logic in its fulfilment recurs to the primitive sense of the word: dialogue. Ideas which are not communicated, shared and reborn in expression are but soliloquy, and soliloquy is but broken and imperfect thought (Dewey, 1991/1927: 218).
>
> [Democracy] is primarily a mode of associated living, of conjoint communicated experience (Dewey, 1916: 87).

As we saw in Chapter 2, for Dewey, ideas in the abstract are worthless. Ideas are given value (and are validated) through their reification in our experience, and more specifically, as the first citation above suggests, in our shared and communicated experience. This includes the idea of democracy, which for Dewey is more than a political philosophy, but is instead, as the second citation above suggests, a 'mode ... of conjoint *communicated* experience'. Before considering what makes a 'good' public participation process, it is first necessary to discuss why public participation should be considered in the first place. To do so this chapter will outline the democratic philosophy of John Dewey, as it is applied in the work of the deliberative democracy of James Bohman. First however, a cursory overview of 'deliberative democracy' as a general movement will be attempted.

Following the "deliberative turn" (Dryzek, 1990) in the early 1990s, a growing body of scholarship has emerged that calls for a system of decision-making in which citizens play a more active, participatory role; a system usually referred to as a 'deliberative democracy' (Bohman & Rehg, 1997; Fishkin and Laslett, 2003; Gutmann and Thompson, 2004). Deliberative democracy is a political movement (a set of theories) which can be seen to emerge from a critique of the standard practices of liberal (representative) democracy - a critique which developed in the eighteenth century in the work of Rousseau (1952/1762), the nineteenth century in the work of de Tocqueville (1835) and Mill (1892) and the early twentieth century in the work of Dewey (1916) (as noted nby Bohman, 1998). Representative democracy is the established, dominant model of Western political systems. The constitution of such systems is rooted in the idea that political representatives are to be elected and are to make decisions on behalf of the electorate. This model has been seen to possess a number of limitations, with participatory and deliberative democracy theorists contributing significantly to this critique. Elster (1998: 2) for example, suggests that although the electorate do have a share of political control – insofar as they can choose whether or not to re-elect – this control is indirect and therefore 'diluted'. The representative model is also referred to as the aggregative model, since it 'adds together' the preferences of the electorate (either through voting or through public opinion surveys) without requiring any discussion of the reasoning behind those preferences (Gutmann and Thompson, 2004). That preference which is most fair and most rational is simply that which has the most votes behind it. The representative model is therefore pejoratively seen as a

'majoritarian' form of decision-making akin to the cost-benefit style of decision-making characteristic of 'the market' (Gutmann and Thompson, 2004: 14; cf. Bohman, 1996: 5). Citizens, in choosing between competing 'products' (i.e. political candidates and parties), act much like consumers (Gutmann and Thompson, 2004).[10] Such a model is seen to foster a competitive approach to democracy, where individuals behave (through voting choices) strategically in order to protect private interests and maximise personal gains (Mansbridge, 1980; Cohen, 1997b; Elster, 1997; Young, 2000). Only those views which represent the majority are acted upon, with minority views being precluded as a result. In addition to this, there is the risk of corruption. As Dewey (1991/1927: 68-9) argues, it is only through citizens' scrutiny of public officials that the potential for corruption within the representative system can be prevented.[11] To fail to do so calls into question the very purpose of government:

> If a government exists by itself and on its own account, why should there be government? ... A public articulated and operating through representative officers is the state; there is no state without a government, but there is also none without its public. The officers are still singular beings, but they exercise new and special powers. These may be turned to their private account. ... there is nothing perplexing nor even discouraging in the spectacle of the stupidities and errors of political behaviour ... Only through constant watchfulness and criticism of official by citizens can a state be maintained in integrity and usefulness.

Deliberative democracy is juxtaposed with the representative model to argue that the former is a more genuinely legitimate form of decision-making. As Bohman, (1998: 401) in his survey article suggests:

> Deliberative democracy, broadly defined, is thus any one of a family of views according to which the public deliberation of free and equal citizens is the core of *legitimate* political decision making and self-government [emphasis added]

[10] It could be argued that the term 'citizen' is used somewhat inappropriately here by Gutmann and Thompson (2004), given that, as will be discussed in this paper, it resonates with participatory and deliberative democratic theory, and contrasts with a more attenuated version of the citizen – that is the 'passive voter' characteristic of the representative model.

[11] A recent example of the need for the activities, including personal activities, of represented officials to be publicly scrutinised is the UK 'expenses row, in which parliamentary ministers were accused of claiming expenses far beyond what was deemed appropriate. This controversy has indeed challenged the integrity of the government.

Provided is it organised in such a way (as will be discussed in the following section) it is argued that as well as making 'its outcomes more just' the process of deliberation, 'makes the reasons for a decision more rational' (Bohman, 1997: 322). In other words, deliberation can ideally facilitate decisions which are also more effective (because they are 'more rational') as well as being more legitimate because they are 'more just'). Of course, as some commentators have pointed out (e.g. Webler, 1995) there can often be a tension between these two ideals (or in Webler's terms, between the related concepts of 'fairness' and 'competence'). Nevertheless, the theoretical appeal of deliberative democracy rests largely on these two concepts and in particular on its proposed legitimacy (fairness).

Related to earlier argument made in Chapter 2, Bohman (1999: 591) employs Dewey's (1991/1927) idea that democracy is a form of social inquiry:

> [D]emocracy should not only employ free and open deliberation of citizens but also the best available methods of inquiry. Those methods are the methods of science, broadly understood as all cooperative critical inquiry

Bohman's Pragmatist tendencies are evident. He suggests that legitimate decision-making should be participatory and deliberative in nature and moreover that deliberation is itself a process of cooperative critical inquiry. Aligning himself with the Deweyan tradition, he argues that the 'best' available method for inquiry is the (broadly-construed) experimental method. Anathema to Bohman (1999: 595) is any conception of deliberative democracy which exists only hypothetically and which is therefore of little practical significance:

> The current theories [of deliberative democracy] are primarily procedural, and they base their accounts on the ideal rather than on actual conditions. On my view this is a mistake since it makes it difficult to connect normative political theory to practices of actual democracies and to real possibilities for democratic reform

For Bohman, deliberative democracy needs to represent more than just a 'nice idea' and must be practical in nature. To contribute to 'real' political change, deliberative democracy must itself be rooted in experience. Bohman (1999) proposes an

experimental model of democracy, wherein the citizen plays an active role as a (democratic) *inquirer*.

For Bohman, deliberative democratic inquiry is oriented to two ends: Firstly, the citizen can participate in 'deliberation about the specific ends or choices', namely the 'content of expert knowledge' (Bohman, 1999: 592). Secondly, the citizen can participate in 'deliberation about social norms and epistemic procedures', namely the terms of cooperation with experts' (Bohman, 1999: 592). In short, Bohman's characterisation of democracy encourages citizens to make both judgements about the credibility of expert authority and the norms of cooperation (with experts) on the other. Chapter 8 will discuss the concept of 'expertise' as it has hitherto been represented in the literature, and will then return to this concept to see how participants in the Citizens' POLIS constructed it. This will include a discussion of the notion of credibility, particularly in terms of the citizens' comparative analysis of different forms of 'expertise'. Chapter 9 will discuss the participants' views on the role of public participation, including their critical reflection on the norms of cooperation between citizens, scientists and policymakers.

Through participation, citizens 'deliberate on how best to achieve consensual ends' (Bohman, 1999: 590). As suggested in Chapter 2, deliberation as social inquiry is the consideration of the possible consequences of future choices or courses of action. However, the terms of this social inquiry – i.e. the terms of deliberation – are not fixed *a priori,* and instead need to be considered and reconsidered in light of *experience.* As suggested in Chapter 2, the study of participation processes is also a form of sociological inquiry. In this respect, research on public participation processes is necessarily *experimental;* it too is inherently Pragmatic. Conceived in this way, both the legitimacy and effectiveness of a process are grounded in the experience of participation *per se;* both emerge *a posteriori*, after the process has taken place. These standards are provisional and adaptive; the more we experiment with participation, the more we learn about what it means to be "legitimate" and "effective". This therefore links to the argument made in Chapter 2, that there is a need to experiment with the organisation of public participation processes, such as the Citizens POLIS. Building on Bohman's work, we might suggest that one task of the social scientist therefore is to experiment with different ways of organising and facilitating deliberation (see also,

Michaelman, 1997). For Bohman (1999) there is a need for explore ways to 'create the institutional space for deliberation'. The role of the social scientist in the organisation of public participation processes in general will be discussed in more detail in Chapter 4, whilst their role in organising the Citizens' POLIS in particular will be discussed in more detail in Chapter 5.

3.2. The characteristics of a 'good' public participation process

As noted by Rowe *et al* (2005), the main difficulty in conducting an evaluation concerns the process of defining 'effectiveness' – that is, in selecting suitable cevaluative criteria. There are a growing number of studies which aim to propose normative criteria through which to evaluate public participation processes (e.g. Rowe and Frewer, 2000; 2004; Horlick-Jones *et al,* 2007; Rowe *et al,* 2008). Ultimately, there is no single set of criteria by which to evaluate all participation processes. Evaluation is a complex process, and evaluative criteria can be developed, rejected and strengthened as experience of conducting empirical evaluations is acquired (Rowe, 2009).

According to their definition, determining the effectiveness of the Citizens' POLIS on MTRH took the form of an *assessment* more than an evaluation (Rowe *et al* (2005). Assessments differ in that they are generally more qualitative, more flexible, more subjective, less deductive and less generalisable than more quantitative, systematic and rigid evaluations Rowe *et al* (2005: 340-41). Although evaluations can sometimes be pragmatic (Rowe *et al,* 2005: 341), because no pre-existing evaluation paradigm was used here, and because the criteria were derived specifically for the purposes of assessing the Citizens' POLIS in particular, the approach taken here is more consistent with a fully pragmatic assessment exercise. Firstly, although the four criteria for assessment used in this thesis have been provided deductively (i.e. they were applied to the data and did not emerge from them), they have not been systematically applied elsewhere and have been inductively and subjectively drawn from the existing theoretical literature on deliberative democracy. Secondly, because evaluations are, by definition (Rowe *et al,* 2005), less subjective, it stands to reason that in instances where the organiser of a participation process examines the effectiveness of their own process, it is more akin to a subjective assessment than to a (comparatively) objective external evaluation. Thirdly, because of its systematic nature, evaluation can be thought of as a

more time-consuming and thorough exercise – and it is partly for these reasons that assessment was deemed more realistic in this instance. Of course, the criteria used here could be developed and applied empirically to future public participation processes in more systematic evaluations. In the context of this thesis however, it is more accurate to think of Chapter 9 as containing the results of an assessment of the Citizens' POLIS on MTRH. Beyond this three points are worth making:

Firstly, it is important to acknowledge that other approaches and sets of criteria could have been used for assessment of the Citizens' POLIS. For instance, Habermas' (1987; 1990; 1991; 1996) Theory of Communicative Action (ToCA) has been applied to the assessment of public participation processes (Wilkund, 2005a; 2005b). Habermas's popularity is seen to derive from the coherence of its framework (Wilkund and Viklund, 2006: 45-6), due to the fact it is based on four identifiable principles of effective discourse: generality, autonomy, neutrality and ideal role-taking. However, there is a significant problem with the Habermasian model of discourse as a basis for evaluation – namely that it is predicated on a Quixotean assumption that consensus is achievable in all deliberative exercises. Habermas' model been criticised for its naïve belief that, under a certain set of conditions, consensus is a quasi-natural and somewhat inevitable out-growth of the rationality implicit in human communication (McCarthy, 1994). Such an assumption has been criticised by those who argue that although it is an ideal outcome (Cohen, 1997a), on a practical level, consensus is cannot be guaranteed nor even expected, and as such should not constitute an aim of deliberation (Christiano, 1997; Estlund, 1997; Gaus, 1997). An ideal is rarely if ever manifest in actuality (Becker, 1940: 50). The main problem facing the pursuit of consensus is the pluralist character of complex, modern societies (Bohman, 1996; Christiano, 1997; Gaus, 1997; Knight and Johnson, 1997; Rawls, 1993). Although one does not have to agree with Mouffe (2000) that democracy is better thought of as being agonistic, a realistic model of democracy should allow some room for *modi vivendi.* Cohen (1997b) argues that, although deliberants in a democratic process should aspire towards consensus, in practice recourse to non-deliberative methods (e.g. vote-taking) might be necessary or even likely (but importantly that this will be *informed* by the deliberation).

Secondly, it is also important to note that there are some evaluative criteria drawn from the literature (e.g. Rowe and Frewer, 2000), that although they have not been used to

evaluate the effectiveness of the Citizens' POLIS as such, they have nevertheless been taken to consideration in its methodological design. These will be discussed further in Chapters 4 and 5, through discussions of Rowe and Frewer's (2000) 'criterion of independence' and their criteria of 'representativeness', 'impact' and 'transparency'. Also, as discussed in the next section, Rowe and Frewer's (2000) 'criterion of resource accessibility' is also salient.

Thirdly, it could be argued that some criteria are fundamental to all interpretations of deliberative democracy and either underpin or enable the other characteristics. Most if not all deliberative democrats poiunt to the criteria of equality as an being essential criteria for democratic deliberation. An example can be derived from the work of Bohman (2004: 136):

> What makes dialogue so crucial is that it not only proceeds as a communicative exchange, in the form of turn-taking, but also that it is guided by the mutual expectation of uptake; that is, speakers offer reasons to each other and expect that others will consider their reasons or concerns at least to the extent that their speech acts contribute to shaping the ongoing course of the interaction, without anyone exerting control over it or having special status.

Similarly, for Benhabib (1996) the foundation of democratic deliberation is what he refers to as 'egalitarian reciprocity', in which each individual has the same symmetrical rights to various speech acts, to initiate new topics, to ask for reflection about the presuppositions of the conversations (see also, Elster, 1998). That deliberation must be reasoned will be discussed further below. However it is clear that for many prominent deliberative democrats argue the need for power to be equalised as far as possible amongst those entering the communicative exchange in a public participation process. As Foucault (1967; 1970) most famously has argued, all forms of talk are power-laden. In the general sense, deliberation, as a type of talk, is no different. Some have applied this poststructuralist analysis to deliberative democratic theory so as to argue that deliberation can itself simply reproduce the power structures of the elite under the pretence of 'impartiality and 'equality' (Kohn, 2000). The argument that deliberative procedures, however organised, have no normative quality, and cannot be seen as anything other than a product of the specific historical and political context within

which they are borne. Of course this type of argument which focuses on the historically contingent nature of all forms of linguistic interaction (derived from e.g. Wittgenstein, Bakhtin and Derrida) leads us down the constructivist path. Here the well-established argument that constructivism affords no basis upon which moral judgements can be made. At best it is 'normatively empty' (Winner, 1993), at worst it is simply self-refutational (Archer, 1998).[12] If we are to argue in any way that public deliberation is useful to democracy then we cannot see deliberation as being purely a contextual, socially-constructed form of discourse. Deliberation must have some basis upon which normative conclusions can be drawn. Without some external validity beyond the environment within which they are produced, deliberative experiments are of little use politically and therefore do little for the democratic cause. Experiments, by definition, must be seen to have some external validity – i.e. to allow for the applicability of findings beyond the specific case (see Chapter 2). As such, taking a pragmatic model of deliberative democracy allows us to avoid one of the dangers of extreme relativism – i.e. the absence of any external validity.

In summary, this thesis uses four criteria of a 'good' public participation process are employed. They have been chosen because they are - on the researcher's reading of it - most prominent in the literature. They are also largely informed by Bohman's, pragmatic model of deliberative democracy. The remainder of this chapter will introduce and discuss these four criteria in turn.

3.2.1. It has the capacity to inform citizens' views

One of the main ways in which deliberative public participation process, such as the Citizens' POLIS and the citizens' jury, differ from what essentially are public consultation exercises, such as the traditional focus group, is that in the latter, unlike the former, information is not *systematically* provided to the participants before and/or during the process. It is acknowledged that in some cases, traditional focus groups are semi-structured and provide the participants with information and materials as discussion prompts. This however might involve a very small and brief amount of

[12] Of course, not all forms of constructivism go as far as arguing that all knowledge and values are relative. However, as Atkinson (2005) has observed, there has been a growing popularity of constructivism with postmodernist tendenceies – and it is these which are unuseful or even 'pernicious' in that they do not allow us to make sense of, or impose order on, our social world.

reading. This is however different to the deliberative participation process, where a comparatively large amount of material and information *is* systematically provided to the participants. This serves as the 'evidence', which they are to analyse and discuss at length. The following section will address in more detail the capacity of deliberation to *change* participants' views. The focus here however is on the informative capacity of a participation process, and the idea that the purposefulness of deliberation is aided by the provision of materials and information. It is important to note however that it is not assumed that the provision of materials and information is a passive process. It is of course necessary for the participants in a deliberative participation process to be relatively unacquainted with the issue prior to participating (for were they already well acquainted they would be better suited to a role as a stakeholder or even as an expert witness). However, it is important to note that this is not to say the participants do not bring to bear on the process their own knowledge as citizens. Not only do they have the ability to actively interpret the information they receive during the process, but they themselves also possess the ability to inform one another and to inform the process *per se.* This will be discussed in more detail when discussing the exogenic model of public participation (Chapter 4) and the methodology of the Citizens' POLIS (Chapter 5).

In Bohman's (1999: 592) model of deliberation as social inquiry, it is important to see knowledge as 'a shared and publicly defined resource'. Deliberation will be effective and meaningful 'only if citizens are well-informed, particularly with regard to the conditions of social inquiry' (Bohman, 1999: 592). This requires cooperation not only with one another, but also with 'experts', so as to allow for what Bohman (1999) refers to as a 'cognitive division of labour'.

Rowe and Frewer (2000) have also acknowledged the importance of information provision in creating an effective public participation process through their 'criterion of resource accessibility', as part of their suggested normative framework for the evaluation of public participation processes. This criterion requires a process to ensure that participants 'should have access to the appropriate resources to enable them to successfully fulfil their brief' (Rowe and Frewer, 2000). Rowe and Frewer (2000) do however note that there are additional resources which must also be provided, such as those related to time and materials, all of which can affect the quality (or lack thereof) of the process.

In terms of what constitutes information, and what form it should take, Rowe and Frewer (2000) point to the case-specific nature of participation. They cite Moffet (1996, in Rowe and Frewer, 2000) who suggests that 'the precise problem will dictate what resources are required: in some cases, providing information on fundamental aspects of science ... might be appropriate; in others, practical demonstrations of scientific features might help participant understanding'. Although as noted previously, Rowe and Frewer (2000) categorise participation as being a two way process, there is still the acknowledgement that participants, to enter into a deliberation meaningfully, must be 'given' an introduction to the technical information. As will be discussed later, once this basic understanding has been achieved, the participants are well placed to critically assess evidence which has more normative and ethical implications. Their views can be considered *informed* views. This is however not possible until they have acquired a basic grasp of the underlying technical subject matter. As will be discussed further in Chapter 5, this can take many forms, including simply giving written information or through giving more interactive and presentational forms of learning. Rowe and Frewer (2000) also note however, that just as it is possible to 'under-inform' the participants, so too is it possible to 'over-inform' them: 'information overload is possible, which is liable to lead to stress and confusion ... [and] to avoid this, concise summaries of information, free of jargon, would seem apt (see also: Horlick-Jones *et al,* 2007)'.

3.2.2. *It allows citizens to change their views (where and when appropriate)*

One important question proponents of deliberative democracy ask is whether deliberation can allow for citizens' views to change in a public participation process. The first thing to note here is that this does not assume that citizens' views should *necessarily* change within a public participation process for that process to be considered successful. Rather, it more specifically asks whether a participation process is organised such that citizens can work cooperatively (see section 3.2.3.) towards a mutually-satisfactory resolution to the policy problem which is the focus of their deliberation. In a plural and complex society, the likelihood is that citizens will enter into deliberation with very diverse views, ideologies and positions. Whilst this is not a problem *per se* - quite the opposite in fact - it *is* a problem if the citizens are unwilling

to change their views *tout court.* In such instances one might just as well revert back to a non-deliberative majoritarianism. Effective deliberation then must encourage citizens to be open to change, and this must in turn entail cooperation, trust, compromise and the reasoned justification of one's own views. These criteria will be discussed in the following two sections and further discussion related to the need for citizens to be open to change will also be covered therein.

3.2.3. *Deliberation is cooperative*

> These same forces however... have also brought about the conditions which halt the social and humane ideals that demand the utilization of government as the genuine instrumentality of an inclusive and fraternally associated public... The democratic public is still largely inchoate and unorganized. (Dewey, 1991/1927:109)

Dewey has argued that for a public to be useful as an active democratic public, it needs to be inclusive, fraternal and organised. For them to be considered an effective group of citizens - a 'democratic public' if you will - it is necessary that their inquiry is cooperative rather than individualistic. For Dewey (1991/1927: 142), the very act of communication, effectively organised, allows for an otherwise formless group to be considered a cohesive 'community':

> Without such communication the public will remain shadowy and formless, seeking spasmodically for itself, but seizing and holding its shadow rather than its substance. Communication alone can create a great community.

In foserting a 'democratic public', a public participation process creates a sense of 'civic pride'; a shared sense of identity and duty. In an effective participation process the citizen participants understand the importance of their role, take their role seriously and work together to discuss and to form what they see as being the best solutions given the evidence at their disposal. As discussed in Chapter 5, the participants were chosen according to a set of criteria, so as to make them as representative as possible (as far as a small group can ever be representive) of much wider publics – that is the UK and Swedish publics (see also, discussion in Chapter 2.2).

As discussed above, the Habermasian argument that, under ideal conditions, deliberation should bring consensus, is popular. Bohman (1996; 1998; 1999) partially draws on the work of Habermas (1996), amongst others, to develop his model of *cooperative* deliberation. Although pragmatists agree that the purpose of inquiry is to work towards consensus (Rorty, 1999: xxv), it is not necessarily required nor expected (cf. Cohen, 1997a). Although a measure of disagreement must therefore be accepted as an outcome of as well as an input into deliberation, there is also the argument, as made by Gutman and Thompson (1996), that if disagreement runs too deep there is little purpose to argument. As suggested above (Chapter 3.1.), deliberation, - as cooperative social inquiry - is a means of deciding how best consensual ends (cf. Rorty, 1999: xxv). In response, some deliberative democrats have proposed that deliberation be based on 'reasons all can accept'. Cohen (1997a) for instance, has proposed the idea of 'reasonable pluralism'. This is when a group of citizens, with 'distinct and incompatible understandings of value' are able to engage with one another in the pursuit of consensual decisions because they are united by their shared aim of finding a solution to a given problem and the fact that they are both bound by a respect for the reasonable opinions of their fellow participants (Cohen, 1997a: 408). This requires trust in ones fellow participants, a cooperative attitude and a shared commitment to the notion of citizenship. Such a problem-solving approach is akin to the Pragmatist conception of democracy.

Bohman and Richardson (2009) take a more explicitly Pragmatic stance, and suggest that deliberation should be based on reasons that all *do* accept. They argue that deliberation can be 'sensitive to the diversity of citizens' beliefs and commitments' whilst also placing faith in the capacity for reasoned discussion between citizens to *actually* result in agreement. Whilst it cannot be guaranteed, 'the hope' is that such discussion, provided it is attended by civil and reasonable participants, and provided it is given the proper institutional support and organisation, will result in consensual acceptance of a given decision, based on the acceptance of the reasons proposed for that decision. Their 'modality of actuality' (as a substitute for a 'modality of possibility') implies that 'deep compromises' in individual (pre-deliberative) viewpoints might be necessary en-route to agreement (Bohman and Richardson, 2009). To emphasise this, it is worth reproducing their argument in full:

> [O]ne is simply insisting that, say, *actual* agreement is what needs to be achieved. The hope is that citizens will civilly engage with one another on the basis of the reasons that each actually accepts, that legitimate democratic processes will institutionally encourage this mode of engagement, and that full justification will be reached in which political decisions—which perhaps represent deep compromises in relation to people's starting positions—will end up being found actually acceptable by all (all citizens, all reasonable citizens, or all affected).
>
> (Bohman and Richardson, 2009: 272)

Consensus then cannot be guaranteed through deliberation, but it is the hope in, and commitment to, cooperation and agreement between individual views (whether this is 'deeply compromised' or not) which can be considered a characteristic of effective participation. Of course, working with a 'modality of actuality' means that it is not possible to verify whether or not deliberation is legitimate (in terms of being cooperative and reaching agreement) until after the process has taken place. Were this not the case however, then the process could scarcely be considered Pragmatic in the first place (see Chapter 2.2.1.).

3.2.4. *Deliberation is reasoned*

As is no doubt already evident from the preceding section, another criterion of a 'good' participation process is that deliberation should be *reasoned.* That is, citizens participating in the deliberation are expected (indeed required) to substantiate their views, by stating the reasons as to why they have come to these views. As a result, 'proposals may be rejected because they are not defended with acceptable reasons, even if they could be so defended' (Cohen, 1997: 74). Importantly however, these reasons should emerge from deliberation, and should not simply be representative of the citizen's own individual interests and reasons. The reason for putting forward a particular view should not be that this view best represents their individual interests. In this model of deliberation then, not all views are created equal. Estlund (1997) criticises Dahl (1956) for his assumption that the views of every adult citizen should be accorded equal value in determining policies. Aggregative democracy accords equal value to each vote irrespective of the reasons behind that vote being cast. Not only of course are

the reasons behind casting a vote not required, but also the vote itself is kept secret.[13] According to Estlund (1997), the views of citizens' must be weighted according to the relative value of the reasoning behind those individual views. Some reasons then are better than others, and their relative value is determined within the deliberation itself (Michelman, 1997). That is, it is the acceptability, indeed the 'persuasiveness' of a given reason in a (non-coercive) deliberation which determines their relative value. It is not possible to determine abstractly what constitutes a 'better' reason. As such, deliberative democracy is seen to be preferable to aggregative democracy because '[p]artiçipants arrive at a decision not by determining what preferences have greatest numerical support, but by determining which proposals the collective agrees are supported by the best reasons' (Young, 2000: 23).

Bohman and Richardson (2009: 272) see their model of deliberative democracy as being concerned not with 'a reason of some ideal type, but with the practical norms governing the conduct and expectations of citizens engaged in mutually respectful, civil, and cooperative processes of deliberation'. This final criterion ties nicely to the previous criteria. Reasons are embedded in the act of deliberation; existing reasons are (possibly) changed and reconstituted, whilst new reasons can emerge through deliberation. However, reasonable deliberation is in itself dependent on deliberation which is mutual, cooperative and open to compromise (as well as being informed – see Chapter 3.2.1.). The Pragmatic model makes the argument (one made also by Michelman (1997)) that for a deliberative process to be considered effective it requires an appeal to reason; yet to know what is 'reasonable' in the first place requires us to carry out the act of deliberation. As such, assessing the value of the deliberation is in this sense very Pragmatic.

Chapter 9.4 will discuss the deliberation in the Citizens' POLIS, and will look to see whether there is evidence of the appeal to reason. It will show whether attempts are made by the citizens to substantiate – i.e. to give the reasons behind – their views. It will look also to see whether the deliberation was informed and cooperative and whether citizens' views were open to change. Determining whether or not the

[13] There are of course good reasons for the secret ballot in a representative system of democracy. A deliberative system of democracy on the other hand is built on citizens knowing what the other participants views are in order to work, deliberatively, towards a decision.

deliberation in the Citizens' POLIS met these criteria can go some way to determine whether or not it can be considered a 'good' participation process.

This section has discussed some criteria through which we might assess what constitutes 'good' deliberation in general terms. Because the Citizens' POLIS is an electronic participation process, it is also necessary to discuss the benefits and limitations that are to be had from using electronic media to facilitate 'virtual' deliberation.

3.3. The benefits and limitations of electronic participation and computer-mediated communication

> The new technology applied in production and commerce resulted in a social revolution ... But the simple fact is that technological industry has not operated with any great degree of freedom. It has been confined and deflected at every point; it has never taken its own course ... The Great Society created by steam and electricity may be a society, but it is no community (Dewey, 1991/1927: 108).
>
> There are those who lay the blame for all the evils of our lives on steam, electricity and machinery ... In reality, the trouble springs rather from the ideas and absence of ideas in connection with which technological factors operate ... If the technological age can provide mankind with a firm and general basis of material security, it will be absorbed in a humane age. It will take its place as an instrumentality of shared and communicated experience (Dewey, 1991/1927: 141).

The above citations suggest that Dewey was ambivalent towards technology. He acknowledged, as did many philosophers of his era, that technological advance and industrialisation had led to the erosion of certain forms of social cohesion. The increased mobility as a result of developments in transport (e.g. steam engines) had ushered in the 'deparochialisation' of society. At the same time, Dewey acknowledged that if technology could be harnessed in a 'humane age' to projects such as the reform of democracy and of 'the public', then it could be used to society's advantage. Dewey also saw technology as possible instruments through which social inquiry and the communication of shared experience could take place.

Of course, since Dewey's time, the world has seen changes to that which s considered 'new' technology. Whereas for Dewey, new means of communication would include the early telephone, now new means of communication includes the internet and of course mobile telephones. Nevertheless, this section takes its lead from Dewey in discussing the potentials and limitations of technology – in this case the information technology and the internet – as a potential tool for democratic communication./

It has been noted that electronic public participation has gained much theoretical if rather less practical attention (Dahlberg, 2001b, Rowe and Gammack, 2004). Given the lack of empirical examples of deliberative electronic public participation processes, any arguments made in relation to this subject are forced to draw on more general social and psychological research into what is often referred to as Computer-Mediated Communication (CMC). CMC is 'tentatively defined as any human symbolic text-based interaction conducted or facilitated through digitally-based technologies (Spitzberg, 2006: 630; see also, Bannan-Ritland, 2002; Thurlow *et al*, 2004; Walther, 1996). The conduits of communication include email and listserv (group email) interactions, web boards, instant messaging (IM), text-supplemented videoconferencing, 'chat rooms' and MUDs (multi-user dungeons). Academic attention has focussed mainly on text-only CMC (Herring, 1999), and has produced a number of theories concerning CMC *vis-à-vis* face-to-face (FtF) communication.[14] It should be noted therefore that in the discussion which follows, references to CMC imply specifically text-only CMC. However, given that the participants' deliberations in the Citizens' POLIS was also text-only CMC, this is not seen to be a limitation of the discussion. A growing body of research also discusses the potential methodological applications of CMC to social science research in general, but in particular to the study of CMC amongst certain social groups or to the study of sensitive topics or participants (e.g. Dicks et al, 2005; Murray, 1997; Mann and Stewart, 2000; Rezabek, 2000; Franklin and Lowry, 2001; Scott, 2004; Seymour, 2001; Stewart and Williams, 2005).

[14] This it seems applies to electronic communication in general. Despite the growing popularity of the use of electronic audio communication – such as the use of VoIP (voice over internet protocol) and electronic audio-visual communication - such as the use of webcams and microphones or videoconferencing software – the majority of electronic communication (formal and informal) is text based (e.g. email and instant messaging (IM).

Computer-mediated communicative conduits are increasingly being used to facilitate what is now commonly known as electronic or e-democracy. E-democracy includes innovations ranging from publicly-accessible government information websites (Scott, 2006) to large-scale e-voting (including e-referenda) to smaller-scale deliberative e-fora (Wright, 2006). Electronic public participation can be thought of as a particular form of e-democracy. In line with Rowe and Frewer's (2005) typology of public engagement mechanisms (as discussed in Chapter 4), electronic public participation can be considered a particular form of e-democracy which is distinguished (from other forms of electronic public engagement by the bidirectional flow of information between citizens and sponsors. Whilst the number of examples of electronic public communication and consultation are growing considerably, the same cannot be said of electronic public participation.

The advent of the World Wide Web saw a wave of optimism tied to what was perceived as the bright future of democracy. However, some commentators have since taken a more sceptical view. They have suggested that electronic public participation and e-democracy offer nothing new and merely extend 'politics as usual' to a new medium. This, they claim will simply perpetuate the political power of those already dominant, such as politicians and the media (Margolis and Resnick, 2000). Such a view is referred to as the 'normalisation thesis' (Resnick, 1999). They suggest also, that the relatively scant amount of empirical data which does exist shows that, in practice, the availability of e-democracy resources does not necessarily engender greater participation (Bimber, 2001), and that those who do participate online have similar social backgrounds to those who participate offline (Ward and Vedel, 2006). Others have taken the normalisation thesis further to argue that participatory inequalities are exacerbated, forming a 'digital divide' (Norris, 2001). Because it relies on access to the relevant technology, e-democracy from this perspective is said to create barriers for those who wish to engage (or be engaged) but who do not have access to the technology (or are unable to use it). In response to these criticisms, a number of other commentators have leapt to the defence of e-democracy and have thus retained the faith in the internet's democratic potential which precipitated its emergence (Blumler and Coleman, 2001; Dahlberg, 2001a; Bohman, 2004). Indeed, scholars have even portrayed deliberative e-fora as 'technologies of connection' (White, 2001) which could constitute a modernised and cosmopolitan public sphere (Gimmler, 2001; Bohman, 2004). Rather than it being

responsible for the erosion of social capital and civic participation (Putnam, 2000), the internet has been seen to help, foster and augment them (Shah *et al*, 2002). Furthermore, as Bohman (2004: 142) argues, '[i]n a complex, large-scale and pluralistic society, [technologically] mediated communication is unavoidable'. These commentators, whilst they do not deny that e-democracy creates barriers of its own, argue that it also helps to remove other, perhaps more significant, barriers. It is argued that the use of the internet in democratic processes has been seen to expand the numbers of the politically active and engage otherwise inactive or unreachable groups, such as young citizens (Gibson *et al*, 2005; Forcella, 2006). In-between these two arguments is a third, and arguably more nuanced, position, one that sees there to be both benefits and limitations (or 'promises and perils') of electronic public engagement (Rowe and Gammack, 2004).

Despite this ongoing debate on the hypothetical benefits and limitations of electronic public participation, the argument that there remain 'very few examples in any country of the internet being used to involve citizens in policy deliberation' (Coleman and Gøtz, 2002: 36; cf. Rowe and Gammack, 2004) remains most pertinent. It is likely then, that this debate will remain unresolved, unless there is a turn towards empirical research in the form of actual electronic public participation processes. This echoes the argument made in Chapter 2, that there is a need for experimentation (in the Deweyan sense of the term) in public participation in general. It is only by organising and implementing electronic public participation processes that we produce data through which to test what are at present hypothetical benefits and limitations.

The remainder of this chapter will offer a discussion of the benefits and limitations of electronic public participation and CMC, as found in the literature on this subject. The purpose of this is to provide a basis for further discussion later in the thesis. Chapter 9.5 looks at the citizens' views on the characteristic features of electronic public participation (and CMC generally), and discusses how these findings relate to the literature on the subject. From a survey of the literature, the three most prominent features of electronic participation (and CMC generally) are: its *deindividuating* effect; its *attenuation of social (status) cues;* and its *disinhibiting* effect. These features will now be discussed in more detail.

3.3.1. Deindividuation

In text-only CMC, participants can be anonymous since they are geo-spatially removed from one another, and are only able to see the messages typed and 'logged' (on emails or message boards or in IM rooms or MUDs) instead of being able to see one another's face or hear one another's voice. It has been suggested that this anonymity can lead to *deinvdividuation* within the group. The deindividuation effect is a well-known thesis proposed by Spears and Lea (1992; also, Spears *et al,* 2002; Watt *et al,* 2002). According to their interpretation of self-categorization and social identity theory, an individual's behaviour in any situation can be placed along a continuum which ranges from entirely personal (i.e. conforming to personal values and norms) and entirely group based (i.e. conforming to group-defined values and norms). They propose a Social Identity Model of Deindividuation Effects (SIDE) wherein the anonymity and subsequent loss of interpersonal cues results in the shifting of perceptions and self and others from the personal to the group level, thus encouraging behaviour that is normative for the group as a whole. This implies that self-awareness in CMC shifts away from the individual self and towards the 'group self', more so than is the case in FtF communication. The implication of a group identity is that the participants in a group activity act more cooperatively and more 'together' rather than as a collection of individuals.

3.3.2. Attenuation of social (status) cues

The anonymity conferred by CMC also relates to the presentation of the participants' identities (or their 'self', using Goffman's (1959) terms). In FtF interaction, identity is presented via a combination of verbal discourse and visual cues. Amongst these, social status cues have been seen to play a significant role both in self-presentation and in the interpretation of others' identities (Berger *et al,* 1986, as cited in Berger and Zelditch, 1998). Social status cues range from 'indicative' physical cues (e.g. objects or apparel which symbolise wealth) to expressive speech-based cues (e.g. esoteric or gender-specific styles of speaking). Visual, verbal and material status cues make a large contribution to the (particularly early) formation of power inequalities within interactions (Berger *et al,* 1986). Whilst the potential for misuse of the anonymity conferred by CMC has allowed people to present an exaggerated or even false identity,

sometimes in the pursuit of criminal or deviant ends (e.g. Williams, 2000), some advantages of this attenuation have been identified. For example, it has been argued that CMC possesses an egalitarian potential because social status cues can be 'filtered out' (Kiesler *et al,* 1984; Landow, 1994), thereby rendering a focus on what participants are actually saying, rather than on what the participants look or sound like when they are saying it. In such circumstances, participants are not automatically accorded greater or lesser authority in what they are saying because of what they look or sound like. Because authority is more difficult to judge in the absence of visual, verbal and material cues, 'the appropriateness, relevance and sufficiency of arguments need to be demonstrated and justified [through the text itself]' (Rowe and Gammack, 2004: 50).

However, some disadvantages of the attenuation of visual and verbal cues have also been identified. Given that non-linguistic modes of communication are widely acknowledged as being important to the conveyance (and interpretation) of meaning, it could be suggested that electronic communication is more susceptible to misunderstandings between participants (of course this is if we are to take an unproblematic definition of 'misunderstanding'). Moreover, it has been suggested that the lack of visual and verbal cues in CMC also affects the amount and quality of trust between the participants, when compared to FtF (and other AV) communication (Bos *et al*, 2002). This seems to suggest that trust is something which is more easily fostered in person than in a disembodied, virtual environment. The problem as it relates to forms of political communication, such as electronic participation processes, is that there is difficulty in assessing the credibility of the views of others with whom one is communicating with.

3.3.3. Disinhibition

Disinhibition has also been shown to be more apparent in CMC than in FtF communication. This is where participants are less inhibited during communication – that is they are less likely to show restraint or to 'hold back' in what they say. Disinhibition is usually seen as having negative implications in most social situations, given its association with socially unconventional or even antisocial behaviours. In relation to CMC, there have also been some negative behaviours associated with the disinhibition effect, such as unexpected rudeness, harsh criticism, anger, hatred and

even the issuing of threats (Suler, 2004; see also Netsafe, 2008) – a phenomenon known as 'flaming' (Lea *et al,* 1992). Flaming aside, it is also possible to see disinhibition effects to have more beneficial implications. It has been shown for example, that CMC allows for more 'candid self-disclosure' (Joinson, 2001) than in FtF communication. Participants were found to be more comfortable in expressing themselves than they would otherwise be FtF. The existence of uninhibited self-expression has led to the internet being seen as a source of 'hyperpersonal communication' (Archer, 1980) wherein communication is seen to surpass normal interpersonal levels (Walther, 1996). It is argued that, despite their spatial separation, CMC can encourage participants to develop an intense sense of communalism with the other members of the group (Walther, 1996). Such behaviour is seen to derive largely from the anonymous nature of CMC, in that the risks associated with self-disclosure are seen to be reduced (McKenna *et al,* 2002). In empirical research, candid self-disclosure in group discussions has been operationalised through the study of incidences of non-task related information in essentially task-related group discussions (i.e. by monitoring how much the participants talked freely about themselves rather than, as one would expect, about only the given task). In this respect, CMC can be seen to allow participants more freedom of expression and to allow for greater openness within communication. The implication of disinhibition as it applies to electronic participation, is that participants are less likely to feel restrained and are therefore more likely to 'say what they want' within the deliberation. This of course, as the above discussion has shown can be considered both a positive and a negative thing, depending on how one views it.

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This chapter has discussed the literature on public participation and deliberative democracy. In particular, it has described, via the work of Bohman, deliberative democracy as a form of 'cooperative social inquiry', and one which should take place within an 'institutional spaces for deliberation'. It has been suggested we see public participation processes have been proposed as one such institutional space. Chapter 4 will define more clearly 'orchestrated' public participation processes, and will propose a typology to account for the differences between the ways in which these spaces are institutionalised - in particular by whom and what effect this has on the effectiveness and legitimacy of the process. Chapter 5 will discuss in detail the Citizens' POLIS. The Citizens' POLIS, it has been suggested, is an electronic public participation process

which can be thought of as an 'institutional "virtual space" for deliberation'. The benefits and limitations of using electronic media to democratic ends have also been discussed. Though not without its limitations, electronic-democracy is seen as a response to a changing society increasingly acquiainted with forms of computer-mediated communication. In terms of practicalities alone, CMC has been suggested as a more convenient and economically-viable means of fostering cross-national civic deliberation. Building on Bohman's work, a set of criteria have been developed which can be used for the pragmatic assessment of public participation processes, such as the Citizens' POLIS. These criteria are: the capacity for views to change within deliberation; deliberation as an exchange of 'informed' views; deliberation as 'cooperative'; deliberation as a 'reasoned' exchange of views. Chapter 9 will discuss the assessment of the Citizens' POLIS on MTRH in terms of these criteria.

Chapter 4: Organising public participation processes: a typological discussion[15]

4.1. Introduction: the usefulness of typologies

Typologies have and continue to be held by social scientists as useful heuristic devices, from Weber's (1962) typology of power, to Parsons (with Platt, 1973) AGIL schematisation of societal functions, through to Burawoy's (2005) disciplinary typology for sociology. Famously, Weber (1962) introduced the notion of 'ideal types' – hypothetical constructs useful to social scientists as ordering and sense-making devices. Of course, by their very definition, ideal types rarely (if ever) manifest themselves in the empirical in the exact same fashion as they are outlined in the abstract. As Becker (1940: 50) notes, if [ideal] construct and 'reality' exactly correspond, you are in the morass of the particular'. Despite being subjectively produced by the social scientist, these ideal typologies can be applied across different social contexts (provided similar social phenomena are being studied of course). Howard Becker (1940: 50) argued that the 'constructive typology' is 'an indispensable tool for analysis in the social sciences'. Speaking rather pragmatically, Becker (1940) suggested that the construction of a typology not only allows us to inductively devise the general and theoretical from the particular and the empirical, but it also confers the social sciences with a certain predictive ability;. Pragmatic inquiry, as we have seen, entails the prediction of future consequences based on experience of past consequences, provided the situations are comparable.

However, as some have noted critically, many typologies are often *a priori,* and are not derived from an empirical examination of the activities under consideration (Holmwood, 2007). Typologies and the social phenomena they describe should be thought of as having a reciprocal relationship – empirical observations can serve to refine and inform the construction of typologies, whilst empirical observations can themselves be understood through the examination of existing typologies. Another issue related to the use of typologies is that they tend towards privileging analysts' categories at the expense of actors' categories. One of the dangers here is that the

[15] Material from this chapter was presented at the American Sociological Association's Annual Conference, Atlanta, Georgia, August 14-17, 2010. It is also under review in an academic journal.

analyst moves too far from actors' accounts of their own social world (Collins, 2008). In the extreme, this could mean that the types constructed bear little, if any resemblance to the 'real' world, at least from the actors' own perceptions of it. Collins (2008) - using terminology derived from his own typology of expertises (Collins and Evans, 2002; 2009) – does argue in favour of the usefulness of analysts' categories as an example of the 'contributory expertise' of social scientists. The formulation of typologies might therefore be seen as one such application of contributory expertise – something which Collins (2008) suggests can enrich the actors' own understanding of their worlds.

Within science and technology studies (STS) the value of 'orchestrated' (Leach, Scoones and Wynne, 2005) public participation processes has been the subject of considerable debate. Although it is commonly agreed that some degree of public participation in science and technology policymaking is desirable, questions remain over how this should be operationalized and evaluated. In order to inform and frame our discussion of these fundamental questions, a number of typologies related to public participation have been proposed. The usefulness of these typologies stems from their role as conceptual maps or heuristic devices. In their formulation and discussion, STS has played a significant part.

One needs only to look at the most-cited articles in the leading journal in the field, *Science, Technology and Human Values,* to argue for the usefulness of typologies.[16] At time of writing, the two-most cited articles (Fiorino, 1990; Rowe and Frewer, 2000) are typologies related to public participation.[17] The scope of these typologies varies according to the depth of the question(s) they seek to frame and inform. Fiorino (1990) for instance, has surveyed five different 'institutional mechanisms' for public participation and has also proposed a set of process criteria by which these mechanisms might be assessed. Fiorino's (1990) typology aims therefore to frame and inform two related questions: what forms does participation take (i.e. how can it be operationalized) and how should we know what makes for a 'good' participation process (i.e. how

[16] The term 'typology' is seen here as the product as some process of classification. It is seen as a general term incorporating also 'categorizations', 'frameworks' and classificatory 'surveys'.
[17] As of December 2009, the most cited article in *STHV* was Rowe and Frewer's (2000), whilst the second most cited article was Fiorino's (1990). Additionally, Rowe and Frewer (2000) both ranked highly within the top 20 most read articles (also as of December 2009). For more details, see: http://sth.sagepub.com/

should it be evaluated). Rowe and Frewer (2004; 2005) have extended Fiorinio's (1991) project by addressing each of these questions in separate articles. They have identified and classified over 100 public engagement mechanisms (Rowe and Frewer 2005) and have proposed nine main 'acceptance' and 'process' criteria for their evaluation (Rowe and Frewer, 2000.[18] On an even broader level, Hagendijk and Irwin (2006) have situated public participation in a typology of different 'cultures' of European scientific governance. Amongst these different cultures, Hagendijk and Irwin (2006) identify a 'mode of "deliberative governance"', which is associated with the push for greater public participation in policymaking. Their typology can be seen as an attempt to inform the question: 'how does participation come about and how does it relate to other forms of decision-making?'

Despite their significant contribution to STS discussions of public participation, these typologies nevertheless leave some questions unaddressed. Two pressing and related questions come to mind: By whom should public participation processes be organised?' and 'what role(s) should the social scientist play in public participation processes?'

The aim of this chapter is to propose a typology which attempts to frame existing debate and inform future discussion surrounding these two questions. In doing so it addresses the first major research question of this thesis (see Chapter 1). Rowe and Frewer (2005) have distinguished public *participation* processes from public communication and consultation processes. In the former information is transferred bidirectionally between the sponsors of the process (i.e. political or scientific institutions) and the public representatives.[19] What is not within the scope of these existing typologies is a discussion of how public participation processes might be organised by different types of organiser. It is important to consider not only what forms might public participation processes might take, but also who should be responsible for their organisation. The type of organiser is important because it relates to both the legitimacy and effectiveness of a participation process and thereby to its evaluation.

[18] It is important to note also that other authors have proposed and discussed similar typologies in other, related journals. For example, typologies of engagement mechanisms have been proposed by Wakeford (2002) and Abelson *et al* (2003).

[19] In public communication, information is transferred unidirectionally from organisers to the public representatives. In public consultation, information is elicited unidirectionally from the public representatives to the organisers.

This chapter presents a typological discussion of the organisation of public participation processes. The typology is both descriptive and normative. Firstly, it identifies and describes two main types or models of public participation according to whom the processes are organised by. These are *exogenic* (sponsor-led) participation and *endogenic* (citizen-led) participation. In discussing the limitations of the exogenic and endogenic models, it then proposes and argues for a third model – *mesogenic* (social scientist-led) participation. It discusses why the mesogenic model, though not without limitations of its own, should be seen as the best alternative of the three forms of public participation. In doing so, the chapter also reflects on the potential rôle of the social scientist in the organisation of public participation processes. In this regard, and as will be discussed below, we might consider this thesis as a contribution to the observed 'normative turn' (Lynch and Cole, 2005) in STS. The Citizens' POLIS as a social-science led experiment in public participation will be discussed as one example of how STS specifically and social science more generally can make themselves more 'serviceable' (Webster, 2007) to society. First however, it might prove useful to further distinguish 'orchestrated' public participation processes from other types of public engagement.

4.2. Public participation processes as 'orchestrated' rather than 'organic' public engagement

Although the two are sometimes used interchangeably, the terms 'public participation' and 'public engagement' are not synonymous. Public engagement can be thought of as a broader, 'umbrella' concept which consists of many different forms.5 The orchestrated public participation process is one such form. 'Orchestrated' public participation (Leach, Scoones and Wynne, 2005) is where citizens contribute to science and technology policymaking indirectly, through an organised, deliberative and possibly institutionalized process. It can be distinguished from what we can refer to as more 'organic' forms of public engagement.

In its broadest construal, engagement is taken to simply mean some form of personal 'connection' with an issue (Lorenzoni et al, 2007), and not necessarily a connection which takes place within a structured or institutionalised process as such. On this understanding, many of the forms of engagement are subtle, prevalent and diffuse.

They are therefore more 'organic' in that they are 'naturally-occurring'. The use of this term is influenced by Burawoy's (2005) description of 'organic public sociology'. This Burawoy (2005: 8) explains is where sociologists work with a 'thick, active, local' publics who are manifest in such things as labor movements, neighbourhood associations and communities of faith. Although in some instances, the sociologist might help to catalyse a public movement, they usually always engage with pre-existing public movements (Burawoy, 2005). These movements have already identified themselves in relation to issues of concern, such as green environmentalism, war or globalization (Leech, Scoones and Wynne, 2005: 217). Public participation processes on the other hand, draw together a group of otherwise unconnected citizens. Any connection with each other, and any identification with an issue stems from the fact they are participating in the process.

Organic public engagement includes a wide range of behavioural responses to an issue, such as the altering of one's recycling habits in response to concerns over the environment (Lorenzoni *et al,* 2007; Leach *et al,* 2005). It might also include a wide variety of political engagement, such as the pressing of perspectives through the law, media and internet, as well as involvement in activities like protest and activism (Leach *et al,* 2005). For Burawoy (2005) the social scientist has a moral obligation to engage with existing forms of public political activism. Many forms of public engagement might be considered organic also in the sense that they are less about encouraging public deliberation and more about encouraging public action (in the form of behavioural change or political activism). The role of orchestrated public participation processes however, is in creating Bohman's (1999) 'institutional spaces for deliberation'. Of course these processes might encourage subsequent behaviour change and/or political activism, but the important point is that they will have been grounded in systematic, organized deliberation.

4.3. The typology: An overview

The exogenic model consists of those participation processes that are initiated 'from outside'. They are organised externally by an official sponsor, usually a government agency or institution. The citizens taking part in these processes do not have any direct say in the organisation and structuring of the process. These processes might also be referred to as

examples of 'top-down' participation. As will be discussed in section 4.5., the main limitation of the exogenic model is its lack of *genuine* democratic legitimacy. Chronologically, the exogenic model of participation can be considered the first model of participation, and the identification of its limitations has allowed for the development of the endogenic model.

The endogenic model consists of those participation processes that are initiated 'from within'. They are organised internally by the participating citizens themselves, and either do not have an official sponsor, or have a sponsor which does not have any role in the organisation of the process. Chronologically, the endogenic model has emerged as a critique of the exogenic model. It is characterised in terms of what it sees as the main limitation of the exogenic model – namely, its lack of *genuine* democratic legitimacy. Although, the endogenic model is currently dominant within STS theory, there are few examples of endogenic participation within political practice. The main limitation of the endogenic model therefore, is its lack of political effectiveness.

What I refer to as the mesogenic model could be thought of as those public participation processes that are 'initiated from in between'. They are organised by an intermediary; a specially employed consultant whom is 'neutral' in the sense that they are as independent as possible from those parties whom have a stake in the issue. It will be suggested that the social scientist has the potential to be a suitable organiser. In making this argument however, it is of course necessary to define and distinguish between the concepts of 'neutrality' and 'independence' – terms which are contentious within social research.. This will be discussed below (see Chapter 4.6.) as part of an argument in favour of a model of public participation wherein the social scientist plays a key organisational role. First however, it is useful to discuss how the need for a mesogenic model emerges in response to the main limitations of the exogenic and endogenic models.

4.4. Exogenic participation

Those forms of public engagement with S&T that have been referred to as top-down can be discussed according to two broad trends. The first is the 'deficit model' of the Public Understanding of Science (PUS) and the second is what I refer to as the 'neo-deficit model' of public participation. The original deficit model of PUS (Wynne, 1995) is

frequently associated with the public communication ethos of the Royal Society (1985), and has been the focus of much criticism within STS. The deficit model sees the 'administrative PUS researcher' (Bauer, Allum and Miller, 2006) conducting research on behalf of scientific and political agencies, and information flows downward from these agencies to the public (Rowe and Frewer, 2005). This unidirectionality is implicit in the characterisation of the relationship between what is taken to be a homogenous 'Public' and a monolithic science. The Public are seen to approach scientific and technological issues from a position of ignorance (Irwin, 1995). The general assumption is that this ignorance leads to public 'misunderstanding' (Irwin and Wynne, 1996), which in turn leads to a lack of support for science and technology. Scientific and political institutions see it as their responsibility to improve scientific literacy and support via their public communication mechanisms. When it comes to decision-making, the Public are deemed ineligible because they are seen to be *de facto* ignorant of science (Bauer, Allum and Miller, 2006). The role of science and scientific advice in the deficit model is based on three further assumptions: it is objective, it lends authority to policy, and it separates the technical from the political (Irwin *et al*, 2006). The deficit model of PUS is grounded in an ontologically realist and an epistemologically positivist conception of science. In this model, Science cannot be subject to epistemic challenge by that which it defines as 'non-science' (Gieryn, 1983). In asserting the importance of esoteric knowledge to the formation of policy, Science becomes a 'political resource' (Nowotny, 1981) - the possession of which yields considerable political power (Nelkin, 1975, cf. Jasanoff, 2002).

In the years since the Royal Society report, there have been well-known controversies which have forced governments to change their attitude towards the public understanding of science. Most notably, the UKs BSE crisis of the late 1990s (BSE Inquiry, 1998) contributed significantly to a loss of public faith in science and technology policymaking. In response to the 'civic dislocation' (Jasanoff, 1997) which precipitated the BSE crisis, governments have had to become - or at least have had to appear to become - more reflexive and more transparent. One way in which they have sought to re-establish public trust is by invoking arguments which are well-established within STS. The BSE crisis had revealed the fallibility of scientific advisory systems. It had also revealed the dangers of a hubristic attitude towards science. Whereas once, science could automatically 'speak to power' (Collingridge and Reeve, 1986), this was

	Endogenic **Participation**	*Mesogenic* **Participation**	*Exogenic* **Participation**
Organised by	Citizens	'Neutral' social scientist(s)	Sponsor(s)
Funded by	Citizens	Social science research council or similar 'neutral' source	Sponsor(s)
Epistemology	Constructivist	Pragmatist?	Positivist
Direction of knowledge flow	(Re)construction of subjective knowledge	Mediated exchange of experiential knowledge	Bidirectional transmission of objective knowledge
Framing	Citizens frame issues for deliberation	Social scientist 'guides' citizens in framing issues	Sponsor frames issues for deliberation
Direction of engagement	Proactive citizens engage with scientific and political institutions	Social scientist mediates between citizens and scientific and political institutions	Scientific and political institutions engage with citizens
Evaluated according to	Ideal democratic legitimacy	'Actual' democratic legitimacy	Instrumental legitimacy
Possibility for influence on policy	Low in comparison to the other models	Lower than the exogenic model but higher than the endogenic model	High in comparison to the other models
Practical examples	None	Original citizens' juries (Crosby *et al*, 1984); DIY Citizens' Jury (PEALS, 2003)	UK Government Citizens' Juries (Brown, 2007)

Table 1: Features of the exogenic, endogenic and mesogenic models of public participation in S&T decision-making

no longer the case. Terms common within STS such as 'accountability', 'openness' and 'transparency' quickly became political buzzwords. Trust, it was said would be re-built through public 'dialogue' with scientific institutions, rather than through public deference to scientific institutions. Legitimacy, it was claimed, would be achieved through the active participation of the public in science and technology policymaking.

Over the past decade, a number of political institutions have made use of what is referred to here as exogenic public participation processes, in their attempt to re-create public faith in science and technology policy. Through these processes, institutions have replaced what we might see as an 'exclusive repertoire' of downward information communication (Royal Society, 1985) with what we might see as a more 'inclusive repertoire' of two-way information exchange (House of Lords, 2000). However, it can be argued that, *in practice*, many of the public participation processes that have taken place simply reproduce the assumptions of the deficit model of public communication, albeit dressed in the rhetoric of 'participation'. The features of exogenic participation are summarised in *Table 1,* and will now be discussed in more detail.

Firstly, exogenic participation processes, like public communication processes, are sponsor-led. The vast majority of practical examples of public participation are exogenic, usually being sponsored and led by government or other official agencies. The sponsors provide the funding and generally maintain a high level of control throughout the process, which is often rigidly structured from start to finish.

Secondly, sponsors or their 'steering groups' will usually have set in advance, a range of specific issues and questions to which participants' deliberations should be oriented. Also, there are often a set of possible policy options that are determined by the sponsoring agency, from which the participants can choose following their deliberations. That is, exogenic participation entails finding 'answers' to predetermined, sponsor-set questions. This has been referred to as the 'use or choose' approach to participation (Cornwall and Gaventa, 2001).

Thirdly, exogenic participation processes tend to be grounded in a positivist epistemology. In this respect the exogenic model of public participation is similar to the deficit model of public communication. As such, the exogenic model might be thought of as a 'neo-deficit' model of public participation. The difference between the two, as noted previously, is that in the former information is said to flow between sponsors and the public representatives rather than from sponsors to public representatives. The exogenic model of participation however, still equates scientific knowledge with the truth. As scientists are still seen to have privileged access to the truth, their accounts are

still granted epistemic authority. Public representatives are able to discuss science and technology policy issues, but are not able to challenge scientific knowledge *per se.* Although some exogenic processes do sometimes include 'alternative expertises' (e.g. Collins and Evans, 2002), they usually fail to consider them as forms of expertise in the same way that scientific knowledge is considered expertise.[20] Also, because they are grounded in a positivist epistemology, exogenic public participation processes also claim unproblematically to be representative of a given population. Their findings are therefore also taken, usually uncritically, to reflect the views of that population. The importance of random-stratified sampling in producing a 'microcosm of society' is emphasised (Moldrup, 2002; Wakeford, 2002).

Although it rhetorically employs some of its key terminology, the exogenic model of participation fails to earnestly engage with the substance of arguments made by those scholars whom, for convenience, we might group as the constructivist trend within PUS.[21] The next section will outline these arguments through a discussion of how the constructivist PUS scholars have responded to the exogenic model. Here it is sufficient to suggest that the organisation of exogenic participation processes does not therefore promote epistemic egalitarianism. Rather than different forms of knowledge or expertise being presented to the citizens on an equal footing, much of the evidence is instead weighted in favour of scientific knowledge. The next section will also discuss the terms of participation. To adapt a well-known sociological phrase, the exogenic model allows citizens to participate, but are they able to participate in circumstances of their own choosing?

Fourthly, the value of exogenic participation to the sponsor is the instrumental legitimacy of the process. Because stakeholding agencies sponsor the process it is

[20] Alternative expertises have also been referred to as 'lay' (e.g. Arksey, 1994), 'indigenous' (Leech, Scoones and Wynne, 2005) or 'popular' (Brown, 1987) 'expertises'.

[21] It is important to note that 'constructivist trend within PUS' implies homogeneity amongst these scholars, and does not reflect the many differences and nuances that exist between particular applications of constructivism. Within STS, very different methodological approaches exist – for instance the laboratory ethnography and actor network theories of Bruno Latour (1987; Latour and Woolgar, 1979); the empirical programme of relativism (Collins, 1982) and the discourse analysis (Gilbert and Mulkay, Potter). However, it is possible to argue that these methods have in common their ontological positioning – that is their anti-positivism. Offering specific definitions of a paradigm can often lead to their over-simplification, but in this instance recourse to the textbook might prove useful. Lincoln and Guba () suggest that one of the defining features of the constructivist paradigm is its relativist ontology, and the assumption that realities are locally and contextually constructed. As such the 'constructivist trend within PUS' is united by its assumption that the realities of what 'science' is and means to publics are locally and contextually constructed by those publics.

arguably more likely that the process will result in policv impact. Therefore, some argue that stakeholders should be collaboratively involved in the management of the process (Crowfoot and Wondolleck, 2990; see also Rowe and Frewer, 2000). The rationale for participation is generally framed in terms of accountability, openness and reinstating public trust in science-based policymaking. There is comparatively little mention within political discourse of the value of public participation towards making 'better', more effective decisions. Because the shift toward greater participation is motivated by the desire to reinstate public trust in scientific institutions rather than because it is more ideally democratic system of policymaking, the legitimacy of such processes can be seen as being instrumental rather than ideally democratic. This legitimacy is of course instrumental to the sponsors of the process rather than the public or their representatives. This argument will be returned to in the following section.

A recent example of an exogenic public participation process would be the UK government-sponsored citizens' juries. In 2007, Prime Minister Gordon Brown introduced a programme of citizens' juries on a wide variety of issues, including the future of the National Health Service (Brown, 2007). They were, it was claimed, part of 'an ongoing process of ongoing attempt at reaching out – of doing government differently' (Brown, 2007). Assessments of this programme however, question whether the extent to which these claims are genuine or empty. Lodge and Muir (2007) argue that citizens in these processes have limited power to set the agenda, given that the questions they address are designed in advance by the body which has commissioned them. As well as for pre-framing the issues for deliberation, the motives behind the UK Governments proposals for public participation have also been questioned. Vigor and Macmillan (2004) suggest that: 'In its framework, the government presents public involvement as a way to prevent public concerns from hindering scientific and economic progress. The possibility that citizens might contribute to science and might advance progress is not entertained'. As a series of exogenic participation process, the UK government's citizens' jury programme sees participants selecting policy options based on their assessment of objective information which has been transmitted to them by the organisers: 'Participants will be given facts and figures ... before discussing the issues amongst themselves and reaching a conclusion on the policy options available' (Mair, 2007: 9).

4.5. Endogenic participation

Unlike the exogenic model, there are very few examples of the endogenic model of public participation. This is a good example of a Weberian ideal type. The key question however is the extent to which an endogenic model of *orchestrated* public participation processes are seen as being desirable by those whom are key to their existence – the citizens themselves. . The next section will return to this argument. The endogenic model is essentially a constructivist critique of the neo-deficit model of public participation. For constructivist PUS scholars, the rhetoric of the exogenic model does not go far enough. It does imply the basic premise that the public should be involved in assessing the social, political and ethical applications of innovative science and technology, akin to Funtowitcz and Ravetz's (1993) 'extended peer review'. It does not imply however, that the public should be involved in assessing the epistemic authority of the scientists responsible for these innovations. Since Kuhn (1970), STS has argued that science cannot provide a privileged account of 'the Truth' which is not in some way mediated by the social. In constructivist work, laypersons are seen to play an active role in the production of knowledge - both through their contextual (re)interpretation of the scientific information (Michael, 2002) and by bringing their own forms of expertise and experience to bear on the issues at stake (e.g. Wynne, 1982; Williams and Popay, 1994; Epstein, 1996). In relation to the deficit model of PUS, there is a re-definition of the term 'understanding', wherein multiple, local interpretations of what constitutes science are performed by plural 'publics' (e.g. Irwin, 1995).

STS scholars have thus not responded too enthusiastically to the exogenic model of participation. They take issue with what is seen as a 'new tyranny of participation' (Cooke and Kothari, 2001). Participation processes to simply reproduce existing forms of control or oppression and as having a 'disciplining and thus participation-closing role' (Leach, Scoones and Wynne\, 2005: 11). Citizens themselves are seen to have very little say on the terms of their participation, which are set according to the sponsoring institution's narrow, pre-determined frames (Irwin, 2001; Hagendijk and Irwin, 2006, also: Govern, 2003) and rigid, prescriptive models of 'the Public' (Leach, Scoones and Wynne, 2005: 11).

As noted in the previous section, the value of exogenic participation to the sponsor is in the instrumental legitimacy of the process. Because citizens have little or no say in the formulation of the problem, in the choice of scientific or technological expertise to be consulted, or in the agenda guiding deliberation, participation cannot be seen to be *democratically* legitimate in an ideal sense. Jasanoff (2003a) for instance, has argued that such processes are 'technologies of hubris'. They are seen to be tokenistic means of legitimating decisions; decisions which are often pre-determined and are still derived from a positivist conception of scientific expertise. Exogenic participation has also been criticised for being 'a very top-down commitment to the bottom-up' (Horst, 2003, as cited in Irwin, 2006: 303). This suggests that, despite political rhetoric claiming to the contrary, lessons have not been learned from the limitations of the public communication model. What might be referred to as epistemic recidivism, sees the organisers of the neo-deficit model of public participation making similar mistakes to those made with the deficit model of PUS. Science is still viewed with a naive objectivism, and the significance of the interpretive work of citizens is overlooked. Although they are able to evaluate the political and normative context of applied science, they are not able to challenge, more fundamentally, its epistemic authority. In this respect, exogenic participation processes are in actuality no more democratic than the public communication processes they have succeeded.

Although there are little or no examples of endogenic participation processes, it is still possible to discuss what it might look like in practice, based on the theoretical critique of exogenic participation as found in the STS literature (see *table 1*).

A criticism of the exogenic model is that the issues for deliberation are pre-framed and the range of policy options pre-determined. Moreover the citizens' choices are often steered by the organization of the process (Irwin, 2001: 12). In the endogenic model therefore, citizens are able to frame the terms of their own participation. They are able to control both the practical procedural choices related to the process itself and the wider normative choices related to the purpose of participation *per se.* It is felt that citizens should be able to produce their *own* answers to problems which they (and not the sponsors) *themselves* have determined – something which has been referred to as the 'make and shape' approach to participation (Cornwall and Gaventa, 2001).

Another criticism of the exogenic model, one already noted, is that it uncriticially accepts the epistemic authority of science and fails to acknowledge alternative forms of expertise. The endogenic model then, suggests that public participation processes must take into account the socially constructed nature of knowledge. Ideally, an endogenic participation process would have a range of relevant expertises fed into the process. It would ensure that these expertises are presented symmetrically, and that scientific expertise is not privileged *a priori*. This however might be difficult to achieve given that the process would be organised by citizens who would not necessarily have any specific understanding of social constructivism or any social science training (unless they had studied it of course). Moreover, although following the BSE crisis, public trust in science and technology policymaking has declined, this is not to say that there has been a loss of public trust in science itself. The concern is that the citizens organizing the process would, much like the organizers in the exogenic model, still over-represent traditional scientific expertise when gathering information for the deliberation. There is a danger that the entrenched authority of science within society would mean that citizens might overlook forms of alternative expertise. Also they might fail to appreciate the contribution that they themselves play in actively interpreting scientific information. Bohman (1999) suggests that participation should entail not only the assessment of competing normative claims, but should also entail more fundamental epistemic questions. Participants should therefore be able not only to assess competing expert claims, but to also challenge the terms of interaction with experts and indeed the very nature of 'expertise' itself. Such ideas are common in STS, but are less so amongst the wider public. If we are to conceive of a participation process in which scientific expertise is challenged as well as discussed, then there is a case for STS to be involved in the organization of the process itself. This argument will be developed in the next section.

Another criticism of the exogenic model relates to its claim that participants can be sampled to produce a 'microcosm of society' which in turn produces representative public viewpoints. Because it is grounded in a constructivist critique, the endogenic model challenges the idea that any sampling techniques can produce views which are unproblematically 'representative' of the wider public. Accordingly, it denies that the findings of one group of citizens would necessarily be the same as another group of citizens. This applies irrespective of the type of sampling used or the extent to which the

process itself is standardised. Constructivism of course entails that findings are context-specific and non-generalizable.

A further difference between the exogenic and endogenic models of participation is that the latter is less likely to be followed with policy action than the former. This is because exogenic processes are organised by those who have the political power to be able to institute action accordingly. Some have suggested that stakeholder sponsors should be therefore kept involved during the whole of the management of the participation process (Crowfoot and Wondolleck, 1990; Aronoff and Gunter, 1994). However, as discussed above, the problem is that the action to be taken is often pre-determined and pre-framed (Irwin, 2001) and there is tokenistic (Jasanoff, 2003a) rather than genuine democratic legitimacy. The exogenic model therefore falls short of an ideal conception of democratic legitimacy, if we are to equate ideal democracy with 'strong' democracy where citizens' govern themselves to the greatest extent possible (Barber, 1984). They are are not only empowered to make decisions through deliberation, but have control over the terms of their own participation (i.e. the processes of decision-making are not externally controlled). The endogenic model aspires to participation processes which are legitimate for the sake of citizens rather than the legitimate for the sake of the state. Its aim is to extend the role and responsibility of citizens in science and technology policymaking, rather than to superficially restore public trust in science and technology policymaking. Of course, this legitimacy remains ideal and untested until practical examples of the endogenic model emerge. It is clear that there is tension between democratic legitimacy and policy effectiveness (Renn *et al*, 1995). By its very definition, an ideal is difficult if not impossible to fulfil in actuality.

One possible example of endogenic participation is the 'Do-It-Yourself (DIY)' Citizens' Jury process. This has been developed by the Policy Ethics and Life Sciences centre at Newcastle University, UK. The jury's final report (PEALS, 2003), which was authored by the participants themselves, suggests how the DIY citizens' jury is 'a more bottom up adaptation of the regular citizens' jury method':

> Over the following weeks we met seven or eight times to decide what the subject of the jury should be. Usually in a citizens' jury, the subject is decided by a Local Authority or a government body. But in this Do It Yourself Jury, it was

> us who were in charge.... there was no commissioning body.... We chose a topic and experts with a range of perspectives and knowledge.

It is clear that the citizens in the DIY jury played a far greater role in the organisation of the process than in the government-commissioned citizens' juries discussed in the previous section. However, as will be discussed below, the influence of PEALS in the coordination of the process, leads one to question whether the process was truly citizen-led in accordance with the ideal theoretical model outlined in this section.

4.6. Mesogenic participation

Although citizens in the DIY jury undoubtedly played a much greater organizational role than the citizens in the government-commissioned juries, the organizational involvement of the PEALS social scientists cannot be ignored. If the social scientists' role as 'coordinators' was removed, it is questionable whether the citizens would have had the necessary capacities and resources with which to organize the process in such a systematic manner. In this and other respects the DIY jury, rather than representing a new model of public participation, instead represents a return to the original citizens' juries of the 1980s (e.g. Crosby *et al*, 1986). Funding for the DIY jury, as a social science research project, was secured by PEALS and not the citizens themselves.[22] A more fundamental question is whether citizens are sufficiently motivated to fully initiate and organize a DIY jury. The argument here is certainly not that citizens lack the capacities or motivation for participating in science and technology policymaking *per se*. Neither is it argued that citizens lack the capacities or motivation for engaging with science and technology policymaking in general. Numerous organic citizens groups and social movements attest to this. Rather, it s argued here that whilst the idea of endogenic participation processes works well in theory, orchestrated participation processes that truly citizen-led are not possible in actuality. Some degree of initiation, mediation, encouragement, support or guidance is required before citizens are able to have any say in or control over the organization of a participation process. This argument will be developed throughout this final section.

[22] The DIY citizens' jury was funded by the Joseph Rowntree Charitable Trust. Whilst citizen groups could of course acquire their own funding, a major part of professional academic work is preparing and submitting grant applications. Because of the existence of research rouncils and other funding bodies for academic research, it is arguably easier for a professional social scientist to acquire funding for the organisation of a public participation
process, than in it for citizen groups.

DIY citizens' juries, like the original citizens' juries, are better thought of as examples of a third type of public participation. This third type of public participation can be referred to as the mesogenic model. If we are to agree with the constructivist critique that the exogenic model is democratically deficient, and if we are to argue that the endogenic model can exist only in theory, then the need for an alternative model is clear. Until now, the typological discussion in this chapter has been largely descriptive. It has described two models of public participation, one which exists largely in political practice and another which exists solely in STS theory. Discussion in the remainder of this chapter assumes a more normative character. The aim of this final section then, is to claim that we should explore the possibility of a mesogenic model of public participation and consider the role of the social scientist within it.

In mesogenic processes, the social scientist can therefore mediate between the participants and any interested parties, such as the relevant scientific and political institutions. The social scientist also mediates between the citizens and experts within the process itself. Beyond this, it is possible to develop a possible characterisation of the mesogenic model relative to the exogenic and endogenic models (see Table 1).

4.6.1. *Defining 'Independence' and the role of the social scientist*

The term mesogenic is deemed appropriate because the participation process is therefore organized neither by a sponsor with an invested interest, nor by the citizens themselves. It is instead mediated by a 'neutral' organiser, one who is relatively 'independent'.[23] The importance of neutrality in the organisation of participation processes has long since been acknowledged (Nelkin and Pollack, 1979). The argument here is not that the university-based social scientist is entirely independent, but they are neutral in regard to the issue (i.e. they do not have any explicit 'conflict of interest') and they are more independent than an organiser directly employed by a government or other stakeholder agency.[24] Rowe and

[23] In various conference presentations and reviews of this paper, it was rightly noted that the term 'independent' should be used with considerable caution. I would like to thank the delegates of the Social Studies of Science (4S) Annual conference 2009 and the delegates of the Cardiff University Research and Graduate Schools 2009 conference on 'public engagement' for helping me work out my interpretation of relative independence.

[24] Methodologically, the organiser should aspire to present the various positions as sources of evidence as neutrality as possible, and not based upon preconceived views of what is true or false knowledge or rational or irrational knowledge. Here it is possible to take the lead from D. Bloor's (1978) 'Strong Programme' and its

Frewer (2000: 13-14) in proposing the importance of an 'criterion of independence' to the evaluation of public participation processes, also suggest that independence might be had by using organisers who are derived from 'neutral organisations, such as university academics (see also: Crowfoot and Wondolleck, 1990). The argument that the social scientist is well suited to this organizational role is discussed elsewhere, in reference to an empirical example of a mesogenic participation process (Williams, 2010; included as Appendix H). Social scientists are well qualified to organize public participation processes since they have expertise in social interaction (Jasanoff, 2003b) and interactional expertise in the scientific or technological subject matter (Collins and Evans, 2002; 2007). However, as noted above, they are not tied directly to any interested parties, and in this sense they can be considered 'neutral'.[25] Because their research is not funded directly by agency with a stake in the issue being studied, they are not considered to have a 'conflict of interest' (CoI), at least as far as the common academic understanding of this term is concerned.[26] CoI is generally defined specifically in terms of financial considerations; essentially CoI seeks to ensure that that a researcher's research is not unduly coloured or influenced by financial interests or investments. If it is naïve to argue that the absence of a conflict of interest makes for 'independent' research, it is perhaps far more certain to argue that the presence of a conflict of interest (particularly in cases where that CoI is undisclosed) makes for research which is more *dependent* on - and therefore arguably more influenced by - the funding source.[27]

The defining characteristic of mesogenic processes then, is that they are organised by social scientists, and importantly that these social scientists are 'relatively independent'. Of course, claiming the social scientist is entirely neutral and independent is both spurious and

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principle of methodological presenting all sides of a scientific controversy as impartially as possible. This will be discussed further in Chapter 5.

[25] 'Neutrality' is here defined as being that where an entity is 'not aligned with or supporting any side or position in a controversy' (http://www.dictionary.com).

[26] Conflict of Interest (CoI) policies are increasingly obligatory within many fields of research, particularly in fields related to health, medicine and related sciences (e.g. the National Institutes of Health and the National Science Foundation both have extensive CoI guidelines). The American Association of Universities (http://www.aau.edu/) defines investigator conflict of interest as being 'situations in which financial considerations may compromise, or have the appearance of compromising, an investigator's professional judgement in conducting or reporting research.

[27] There are of course numerous examples of instances where the content and output of research has been exceptionally influenced by funding sources which have a stake in the issue being researched. One such example concerns research, funded by the tobacco industry, which produced research oriented to opposing tighter tobacco control legislation (Gruning *et al,* 2006). Also, Friedman *et al* (2004) found that studies written by researchers with a CoI were more likely to report positive findings. That is, those studies funded by pharmaceutical companies were more likely to report positive findings in studies testing the efficacy of drugs, compared to those studies not funded by the pharmaceutical industry.

misleading. Although some traditions in social philosophy claim that social scientists can, akin to natural scientists, be considered objective (provided the correct methods are applied) (Durkheim, 1982), others argue that sociology, despite its status as an empirical science, must acknowledge the influence that personal value judgements tend to have on our scientific arguments (Weber, 1904; Gouldner, 1962; Becker, 1967). Of course, although objectivity is not necessarily the same thing as neutrality, it has been argued that neither is attainable in any final or absolute sense (Orlans, 1975). As such, the organisers of mesogenic participation processes should not be considered neutral or independent in an absolute or final sense. For a start, organising a participation process is like any type of research project, in that it requires sponsorship in the form of funding.[28] University social scientists are also motivated by factors such as publishing their work and building their reputation within academia, factors which also influence and shape the course and content of their research. This is something we should explore with regard to the role of the social scientist in public participation processes (Kerr et al, 2007).

Following Weber (1904) we cannot deny that the values of the social scientist-as-organiser influence the ways in which the research is conducted, including the very use of method itself. As Law (2004) has argued, research methods are always political and help to create social realities rather than simply reflecting them objectively.[29] One can go a step further and argue that all social research is inherently political (a debate documented by Hammersley, 1995) and that social scientists must choose a particular 'side' (Becker, 1967) and ask for whom and for what sociology is for (Burawoy, 2005).[30] Indeed, the question of

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[28] The effect of funding pressures on the nature of academic work is also something addressed in Burawoy's (2005) work (see also, Smith, 2010).

[30] The debate over the purpose of sociology is hardly a new one. For instance, it was addressed in an 1899 article in *Popular Science Monthly*. Here the issue is nicely captured by Baldwin (1899: 816) who notes: 'It is held by some that the purpose of the sociologist should be merely the acquisition of knowledge, without further thought of the practical use to which the results of his researches might be put. He should aim to discover and formulate the laws of social forces, not to propose ideals of social reform. Sociology is a pure science and has no utilitarian end. By others it is held that the purpose of the sociologist should be the regulation of social forces in the interest of human progress. The object of sociology is the betterment of society, the acceleration of social evolution. It is an applied science and has a practical end. (The argument that sociology should 'make a difference to to the quality of people's lives' was also expressed by C. Wright Mills in his 'The Sociological Imagination' (1959: 226). This purpose of social science was later to be developed by the 'Frankfurt School' of Critical Theory, who building on Marx's (1888) 11th 'Thesis on Feuerbach' believed that philosophy had previously only interpreted the world and that 'the point is to change it'). Baldwin's (1899: 816) diplomatic and pragmatic conclusion was that both these views are tenable [a]nd that sociology, like all sciences, has a double purpose'.

whether researchers should take a stance has also been discussed specifically within the STS community, as captured in a special edition of Social Studies of Science on 'The Politics of SSK: Neutrality, Commitment and Beyond' (1996, Volume 26 Number 2.[31] This debate over whether STS should move away from relativism and aspire to interventionism rather than impartiality has recently resurfaced courtesy of the observed 'normative turn' within STS (Lynch and Cole, 2005).[32]

According to Hammersley (2001), Becker's model of social inquiry was heavily influenced by the Pragmatist philosophy. For Becker, sociological inquiry need acknowledge cultural diversity but need not address the question of whether objective knowledge is obtainable; the approach to be taken is simply that which works (Hammersley, 2001).

The debate over 'public sociology' was iniated by Burawoy's (2004) Presidential Address to the American Sociological Association. Burawoy sees his project as an attempt to characterise the 'division of sociological labour', seeing public sociology as one type of sociology alongside policy sociology, professional sociology and critical sociology. Burawoy echoes Beckers call by urging sociologists to pose themselves the question of what and whom sociology is for. Burawoy makes a normative plea in facour of public sociology, which can be used to 'engage multiple publics in multiple ways' and to 'bolster the organs of civil society' in order to protect it from the ongoing encroachment of markets and states (Burawoy, 2005).

[31] This special edition built on arguments which had been exchanged following an article by Scott et al (1990; see also: Collins, 1991; Martin et al, 1991). They argued that despite claims to the contrary, sociologists 'cannot avoid being drawn into the fray' (Scott et al, 1990: 474). By 'fray', Scott et al (1990) mean the scientific controversies which STS had commonly studied since the late 1970s (e.g. Collins and Pinch, 1979). Their argument derived from a Mulkay, Potter and Yearley (1983), who based on their interpretation of Collins and Pinch (1979) argued that STS controversy studies show 'a lack of social neutrality' because they uncritically (and perhaps unwittingly) 'side' with the 'underdog' (Ashmore, 1996) As Collins (2008) argues: It could be that analysts decide in advance whose side they are on and then choose the direction of the argument according to the way they want it to come out.' STS has for Collins (2008) has become a 'social movement' concerned with defense of the powerless and support for green issues, with the epistemology being plugged in each time in whichever way gets the political job done best'. Though this was disputed (Collins, 1991), the general polemic that STS should reflexively question if it could ever be neutral was borne (Scott et al, 1990). This debate focused primarily on the Sociology of Scientific Knowledge (SSK). However, around the same time, Langdon Winner (1993) posed similar questions in regard to the Sociology of Technology. Winner (1993) questioned whether relativism's 'opening [of] the black box [of science and technology]' was worthwhile if it was found to be normatively empty inside. He writes: 'There is something missing here [with relativism], namely, a general position on the social and technological patterns under study' (Winner, 1993: 375). Jasanoff (1996: 393) summaries these exchanges nicely, where she observes that it centres on 'the uneasy fit between epistemological relativism and normative belief or action'.

[32] The debate over whether social science should be normativist/interventionist or relativist/impartialist) has found voice within both STS (Webster, 2007) and medical sociology (de Vries, 2003; see also: BSA MedSoc, 2003). Raymond de Vries in his presidential address to the British Sociological Association's (BSA) Medical Sociology Group argued in favour of the 'use of useless sociology'. The aim of sociologists for de Vries (200: 290) is to 'ask the pesky and *useless* questions' of those professionals (e.g. Bioethicists) who 'speak truth to power' and whose role it is to address normative issue. Conversely, Webster (2007: 473) draws on the work of Collins and Evans (2002) in order to argue for 'a "more serviceable STS" within the policy room'. Collins and Evans (2002, 2007) are well-known advocates of the need for normativism within STS. Their 'Third Wave' of STS is to propose a 'normative theory' of expertise. Within their theory, sociologists of science are seen to possess a particular form of expertise, which they term 'interactional expertise' (Collins and Evans, 2002). This relates to their ability to critically assess – to 'meaningfully discuss' – scientific knowledge and practice, without being able to actually contribute to the conduct of scientific research per se. They have – and continue to – conduct a number of experiments in an attempt to 'prove' the existence of interactional expertise (Collins, 2007; Collins and Evans 2006; 2009). Such work aims to make itself politically useful by serving as a framework through which decisions can made as to what forms of expertise are useful in different circumstances – sociologists of science can thereby act as arbiters of expertise. It is in this sense that the authors consider their latest project as being associated with the normative turn (noted in correspondence from Dr Robert Evans).

These complex discussions serve as an important background to the argument made here. The comparatively straightforward argument made here is that the social scientist-as-organiser is neutral in so far as they are not explicitly on the side of a given stakeholder. The aim of the social scientist-as-organiser is to make a conscious attempt to avoid 'policy capture' (Burawoy, 2005) – insofar as they are serving the (pre-determined) ends of those political agencies sponsoring the process. So too is their aim to avoid 'siding with the underdog' (Ashmore, 1996) – i.e. to avoid being too eager to champion the cause of the activists, NGOs or other public interest and lobby groups. If the social scientist-as-organiser is on anyone's 'side' it is the side of the citizens, whose democratic potential can find expression in these participation processes. If their research is politically motivated, it is motivated by the principles associated with deliberative democracy; by principles of free, open and equal deliberation (see Chapter 3). If such intervention can be accused of 'social engineering' then this is so only insofar as the institutional space within which democratic social inquiry takes place is being engineered. In this sense, we might consider mesogenic participation processes a part of the normative turn – in the sense that it is allied to the general 'emancipatory character' of this growing body of literature.[33]

This model therefore takes consciously narrow definitions of neutrality and independence. The model is premised on the idea that the university-based social scientist, despite naturally having to justify to their funders how they spend their funding, are not nearly as accountable to their funders as researchers-in-government are to their employers. The former – at least in theory - are enslaved only by their own personal values and interests, and not also by the values and interests of political or scientific institutions; they – again at least in theory - find what they find and are not expected to necessarily draw findings which support predetermined policy goals or decisions.[34] Whilst we cannot claim that any social scientist

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For Webster (2007) the argument that STS scholars are 'interactional experts' is a prime example of a 'reconstructive agenda' (Woodhouse et al, 2002). STS, it is argued, should actively seek to make itself more relevant to policy-related agents and institutions. In discussing the normative turn, Webster (2007) identifies three historical trends within STS. From the tradition of 'epistemological fence-sitting' the field has increasingly moved toward a deconstructivism which seeks to critically break down conventional boundaries and hierarchies related to knowledge expertise and practice (p. 459). For Webster (2007: 472) 'the varieties of boundary deconstruction most commonly found in STS work have in turn led to, and in many ways enabled and encouraged, contributions within the field that work toward a reconstruction of science/society relations'.

[33] I thank Professor Tom Horlick-Jones and Professor Anne Kerr for this expression.

[34] One of the conclusions drawn from a recent symposium titled 'talking to policymakers', was that funders who had a clear stake in the issue being researched were more likely to expect research findings to support and serve particular interests and decisions (organised by the Centre for Economic and Social Aspects of Genomics

is independent in the absolute sense, we can claim rather more confidently that they are independent relative to those organisers of participation processes that are based in, or funded by, political or scientific stakeholders.

There is also the need to consider how independence can be demonstrated. Using consciously narrow definition of the term, demonstrating 'independence' might simply entail showing that funding has come from a neutral source, for example a research council (e.g. Williams, 2010). It might entail requiring organisers to disclose any conflict of interest (Rowe and Frewer, 2000: 13). Where funding has been provided by an agency or institution with a direct stake in the issue, the organizers are responsible for proving that they have not been influenced by the sponsoring agency or institution. In the original citizens' juries, the integrity of the process is reliant on organisers minimising their biases as far as possible (Crosby, 1995: 163).[35] Taking claims to independence at face-value can prove dangerous. For instance, the UK government claims that its citizens' juries are 'run by an independent organiser' (Maer, 2007: 2). However, because the questions they address are already set by the sponsor (Lodge and Muir, 2007) we can argue that by the time the process gets underway it has already been unduly influenced by the sponsor. As discussed above, because this

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(CESAGen), 17th December 2009, Cardiff University). Of course, it is also worth noting that social scientists in university need to adhere to certain conventions and regulations, which might not be the case for researchers-in-government. The organisation of the Citizens' POLIS for instance, has benefitted from the peer review process (see the *Preface* for more discussion of this. Because the production of academic research papers are *often* less time-constrained than the production of policy reports/briefings, the former are sometimes subject to more critical scrutiny than the latter. (Without wishing to generalise too greatly on the basis of his own experience, the researcher nevertheless draws on his own experience working on a large EU government-funded project which includes outputs for both academic and policy audiences. The timescale for the latter was far stricter and shorter than for the former.

Also, it is important to note that there is also a grey area between academic and policy social science. The distinction between professional and policy sociology is addressed in Burawoy's (2005) work on 'public sociology' (see footnote 29, above). The pathology of professional sociology, Burawoy suggests, is that it is liable to 'self-referentiality' – that is, it fails to impact on, or even make itself relevant to, 'real-world' social issues and problems outside of the academy. Although policy sociology is of direct relevance to 'real-world' social issues and problems, its inherent pathology lies in its 'servility' – that is, in its tendency towards being 'captured' by politicians looking for research to justify already predetermined policy decisions. One solution is to enourage policy sociologists to cooperate with professional sociologists. However, as has been argued above, there remains the danger that where researchers work in or directly for government they are still liable to being captured despite their professional training. In principle at least, university social scientists are less susceptible to being 'captured' by policymakers. Burawoy argues that in practice, the different types of sociology often interact and overlap We might think of the mesogenic model then as being an intersection of professional, public and policy sociologies (Also, because it is being reflexively assessed it may also entails an element of critical sociology).

[35] For instance, the Jefferson Center project staff discuss any potential biases and ways to minimise them before the process has begun. Also, both staff and the citizens perform evaluations at various points throughout the process (Crosby, 1995: 163).

independence is compromised, so too is the democratic legitimacy of the process. For the integrity of a participation process to remain intact, its independence from interested scientific and political institutions must be demonstrable from the start (Nelkin and Pollack, 1979). As such, it is arguable that not only does the process need to be facilitated by an independent third party, but that it also needs to be initiated by it. The university-based social scientist with neutral funding seems the obvious choice (cf. Rowe and Frewer, 2000). The DIY jury is a good example of this. However, other 'independent' research agencies would also be suitable. Indeed, the very first citizens' jury was organized by the Jefferson Center which describes itself as 'the oldest of six institutions in the United States, independent of [both] government and universities, [working] to improve democracy without taking policy stands' (Crosby, 1995: 158-9). In line with previous discussion, participation processes like the citizens' jury are simply on the 'side' of the citizens (and of their right to engage in meaningful deliberation on policy issues) and are oriented simply to the democratic cause.

4.6.2. Other characteristics of the meogenic model

Although the social scientist takes the lead in their organisation, mesogenic participation processes can enable the citizens to acquire a share of the organizational responsibility (Williams, 2010). The framing of the process is therefore a cooperative endeavour by both the social scientist and the citizens themselves. This relates to Crosby's (1995: 163) idea of 'effective citizen control'. As they participate, citizens not only become informed on the substantive issue, but are also encouraged to help define the terms of their own participation. They are encouraged to contribute to organizational choices, such as whether there should be changes to the agenda and whether new or different experts should be consulted. These are choices which citizens are unequipped for prior to participation, or even in its earliest stages.

A further feature of the mesogenic model might also prove to be its most contentious. Mesogenic participation processes, it is argued, should be grounded in a Pragmatist epistemology. Neither the DIY citizens' jury nor the original citizens' juries deal explicitly with epistemological concerns, and so this argument does not have any empirical roots. Rather, it is a theoretical argument and a response to the epistemic problems of the exogenic and endogenic model. As has been argued, there is in the exogenic model a tendency to over-privilege scientific expertise at the expense of alternative forms of expertise. This, it was suggested is something which could also affect endogenic participation processes.

Additionally, problems exist over the issue of representativeness. The exogenic model tends to unproblematically see the findings of public participation processes as being representative and generalizable. The endogenic model on the other hand is critical of the idea that the findings from one participation process can represent anything other than the views of the participants in that specific process. This of course is one reason why the endogenic model fails to appeal to policymakers. To take a participation process' findings from a constructivist perspective is to render them politically unusable. As Collins and Evans (2002: 240) suggest, where science and technology intersect with the political domain, problems arise which constructivist STS 'cannot handle in an intellectually coherent way'. Specifically, constructivism doesn't easily allow the STS scholars to form or substantiate normative judgements. STS is therefore unable to contribute to policymaking (Webster, 2007) and 'shirks' its civic duty (Lynch, 2009).

As a result of the epistemic problems of the exogenic and endogenic models, an alternative epistemology is to be explored. One possible alternative is the Pragmatism of John Dewey. It is not possible within the scope of this chapter, to elaborate too much on the implications of Deweyan Pragmatism. It is possible to note however, that a number of prominent Deliberative Democracy theorists have identified Dewey's Pragmatism as a 'congenial' philosophical basis for public participation (Dryzek, 2004; see also Bohman, 1999; Knight and Johnson, 1996). Pragmatism as it applies to deliberative democracy is 'committed to ensuring free and equal access for all relevant actors to all relevant arenas of public debate and deliberation' (Knight and Johnson, 1996: 68). Beyond this, pragmatism a la Dewey is founded on two basic principles: an experimentalist methodology and a consequentialist conception of legitimacy. It holds that all theory should begin with practice (Talisse, 2005). Our theories – in this case our ideas of effective public participation – are developed by experimenting with different types of practice. The job of the social scientist is to experiment with different ways of organising public participation (Michaelman, 1997) through the creation of 'institutional spaces for deliberation' (Bohman, 1999). Mesogenic public participation processes might therefore be seen as one type of institutional space.

The idea the social scientist could play an interventionist role in public participation is however not exempt from criticism. Rayner (2003) for example, questions whether involving the social scientist in science and technology policymaking is merely the substitution of one form of technocracy for another. This is in a sense valid, if we are to see the organization of

public participation processes as a form of social engineering. However, this is not necessarily a problem if we see a pragmatic, experimentalist approach to public participation as being akin to Popper's (1971) notion of 'piecemeal social engineering'. For Popper (1971), as important as the design of political institutions is the active role of those persons which constitute them. Here, one can refer to Dewey's (in Boydston, 1990: 222) argument that 'guidance can be an aid to freedom, not a restriction upon it'. It was suggested in the previous section that participation should encourage citizens to challenge the taken-for-granted authority of scientific expertise and acknowledge the epistemic contribution of alternative forms of expertise. One of the main achievements of STS is its success in deconstructing scientific expertise and in challenging hegemonic assumptions about the epistemic authority of scientific knowledge If, as has been suggested, citizens require support in terms capacities and resources, one role for STS might be in 'guiding' participants in developing a more critical attitude towards science. For Bohman (1999), participation should entail not only the assessment of competing normative claims, but should also the assessment of more fundamental epistemic claims. STS could also guide citizens in acknowledging both alternative forms of expertise and their own role in actively interpreting scientific knowledge. Borrowing Dewey's term 'guidance' is appropriate, since it does not imply that the social scientist controls over the organization of the process. Rather, it implies that s/he facilitates and enables it. Guidance in this sense can liberate deliberation.

It is evident however that the mesogenic falls short of the ideal democratic legitimacy defined by the endogenic model. The argument here however is that it falls less short of the ideal than the exogenic model. At the same time, the mesogenic model is perhaps more practically feasible, and is more pragmatically achievable, in terms of instrumental legitimacy, than truly endogenic processes which are orchestrated entirely from the bottom-up. According to Dryzek (2004: 72), 'the legitimacy of any collective decision should be sought in reflective acceptance on the part of those subject to the decision. The best way to ensure such acceptance ... is to allow those affected individuals' access (directly or indirectly) to consequential deliberation about the content of the decision at hand. Thus the legitimacy of the mesogenic model contrasts with the legitimacy of the exogenic and endogenic models.' The legitimacy of the mesogenic model is neither instrumental nor ideal democratic. It is instead grounded in the process itself – it is grounded in the very act of deliberation.

By grounding itself in a pragmatist epistemology, the mesogenic model does not naively assume that the findings of a public participation process are necessarily representative of the wider public. At the same time, because its findings are not analysed from a constructivist perspective, the mesogenic model makes itself more appealing to policymakers. Furthermore, in making a conscious attempt to disseminate the findings of the participation process to policymakers, the mesogenic model avoids the 'self-referentiality' associated with projects perfomed purely for academic ends (Burawoy, 2005). As such, although the findings of a mesogenic participation process are less likely to be followed with policy action than the exogenic model, they are more feasibly followed by policy action than the findings of an endogenic participation process would be.

4.7. Conclusion

It is felt that this chapter is a contribution to this ongoing discussion about the role and purpose of social science in and to society. Although it does not itself directly contribute to 'normative and reflexive discourse' on science and technology, it does contribute to a normative debates on how to 'build a more "accountable" science and technology' (Lynch and Cole, 2005: 269). One of the best-supported arguments on how to make science and technology more accountable to the public is by directly involving the public in science and technology policymaking. Beyond the basic normative argument that public participation s a 'good thing', efforts have been made to develop various typologies of which can inform normative debates. These typologies serve as useful heuristic devices. To date, typologies have been constructed which inform discussions on the forms participation should take (Fiorino, 1990; Rowe and Frewer, 2005) and by what criteria they should be evaluated (Fiorino, 1990; Rowe and Frewer, 2000). The purpose of this chapter has been to propose a new typology which is complimentary to these existing typologies, but which seeks to address certain questions which are yet to be addressed typologically. This chapter has proposed a typology of orchestrated public participation processes according to how and by whom they are organized.

First, 'orchestrated' public participation processes were distinguished from more 'organic' forms of public engagement. The latter can be thought of as diffuse and naturally-occurring engagement between a proactive public and an issue of concern to them. Orchestrated public participation on the other hand, entails the creation of systematic processes wherein a group of citizens deliberate on an issue which they have hitherto had no significant stake or interest

in. Orchestrated public participation processes can be thought of as 'institutional spaces for deliberation' (Bohman, 1999).

Second, orchestrated public participation processes were divided into three types: exogenic, endogenic and mesogenic participation. The exogenic model consists of those participation processes which are currently used within political practice. They are sponsored, and are seen to lack democratic legitimacy. The endogenic model is borne of a constructivist critique of the exogenic model. It argues that public participation processes need to be more citizen-led and therefore more inherently democratic. However, no endogenic participation processes exist to date, and this paper poses the question of whether they are possible at all. Of course, many organic forms of public engagement, such as political activism, are clearly citizen led. However, it is arguable that the idea of citizen-orchestrated public participation processes is somewhat of a chimera if not an oxymoron. Aside from questions related to capability, resource and motivation, one must question also whether the dual roles of participant and organizer would be incompatible with one another.

Third, as a result of the limitations of the exogenic and endogenic model, it was argued that the mesogenic model should be considered preferable and explored further. The mesogenic model entails that public participation processes should be organized from somewhere 'in-between' the sponsors and citizens, preferably by social-scientists. Importantly the social scientists should be as independent as possible. Here, 'independent' was taken to mean participation processes in which the organizers are demonstrably and relatively independent, vis-a-vis exogenic participation processes. It was also argued that since there are epistemic problems with both the exogenic and endogenic models, the meosgenic model should be grounded in an alternative epistemology. The philosophical Pragmatism of John Dewey is seen to be a suitable alternative. This is something which is explored empirically through the Citizens' POLIS.

In sum, this like all typologies, involves some degree of reductionism. It is hoped that this will of course not compromise its usefulness as a heuristic device. As was pointed out to the author during the preparation of this chapter, whether a typology ultimately stands or falls is

up to history, but either way they should most certainly be placed into the academic spotlight for commentary and discussion.[36]

[36] I thank Dr Gene Rowe for this observation, which was made during personal correspondence stimulated by our discussion at the Cardiff University Research and Graduate Schools 2009 conference on 'public engagement'.

Chapter 5: The Citizens' POLIS (Participatory On-Line Interactive System)

The development of the Citizens' POLIS has been influenced by a range of public participation processes, in particular the citizens' jury (Jefferson Center, 2004; Wakeford, 2002) and the planning cell (Dienel, 1999), and to a lesser extent, the consensus conference (Guston, 1999). Conceptually, the structure and rules of engagement in the Citizens' POLIS are similar to the structure and rules of engagement in these existing processes. However, what is different about the Citizens' POLIS, and what makes it an original approach to public participation, is that it combines a distinct epistemological orientation (Pragmatism) and an organisational philosophy (mesogenic participation) with an innovative application of electronic media. The epistemological orientation and the organisational philosophy behind the Citizens' POLIS have been discussed in Chapters 3 and 4 respectively. The aim of this chapter is to discuss in detail the Citizens' POLIS as an electronic participation process. This essentially serves as the methods chapter for this thesis. It is worth noting that a more abbreviated discussion of the methodological aspects of the Citizens' POLIS has been published elsewhere (Williams, 2008; 2009). This chapter however provides a more detailed discussion of the following consideration: sampling, structuring, moderating, data collection, data management and data analysis. The chapter will develop the model of mesogenic participation, as identified in the previous chapter (thereby extending the discussion related to the research question 1 of this thesis). It will also provide the background for the analysis in Chapters 7-9 (thereby serving as a basis for subsequent discussing related to research questions 2-4).

The Citizens' POLIS can be discussed according to the five main stages that constitute it. These stages are: *the formation of the Ekklesia (Citizens' Assembly), the setting of the agenda, the production of the evidence, the presentation of the evidence* and *the staging of the deliberation.* This chapter will discuss each of these stages in turn. It is split into five sections according to the five stages and each of these five sections is itself split into two main sub-sections. The first sub-section of each stage provides a generic description of the Citizens' POLIS as a process. The aim here is to provide a general guide or procedural 'handbook' of the Citizens' POLIS as it might be used in

any related research project on any S&T policy issue. The Citizens' POLIS as a participation process consists of a set of suggested yet ultimately adaptable 'ways of doing', rather than a fixed set of procedural prescriptions. The first part of this section therefore reads like a series of general recommendations for those planning to organise a Citizens' POLIS. The second sub-section of each stage provides a more specific account of the Citizens' POLIS on MTRH'. The aim here is to discuss the Citizens' POLIS on MTRH as an empirical example of how the Citizens' POLIS can look in actuality. This in turn serves two purposes: Firstly, as with all research projects, there is a need for the researcher to account for what methods they use, so that the reader can make sense of the research findings (in that they can see how the data were collected and analysed etc). Secondly, following on from the more general Citizens' POLIS 'guidebook', a specific and detailed example can also be helpful to others who might wish to organise a Citizens' POLIS for themselves.

5.1. Stage 1: the formation of the *Ekklesia*

In the Ancient Athenian *polis,* the formal gathering whereby citizens would conduct their deliberations and make political decisions was called the *Ekklesia* (□κκλεσία) – translated as the citizens' 'assembly'. In the Citizens' POLIS, the *Ekklesia* is seen as a fitting term to represent the group of participating citizens who are involved in deliberation and decision-making. In ancient Athens, the *Ekklesia* could be composed of up to 6000 (adult male) citizens. All citizens were permitted, encouraged even, to bring matters of importance to the attention of Athenian magistrates and to speak out in the *Ekklesia*'s gatherings. Their primary function however was to cast a vote on decisions made in regard to matters previously raised by their fellow citizens – this was the central feature of Athenian democracy. Of course, a deliberative model of participation - like the one advocated in this thesis – necessitates that a far smaller number of citizens are actively engaged in deliberative decision-making. This small number of citizens may however be seen to represent the views of a much larger number of citizens (see Chapter 3 for a more detailed discussion of deliberative democracy). In this sense, participants in the Citizens POLIS still very much constitute an *Ekklesia*, albeit a much smaller one. As such, although the size and means of decision-making in the Athenian and Citizens' POLIS assemblies are quite different, they still share a central property and a central aim. That is, they are an institutional

space within which citizens actively and directly contribute towards the decision-making process. In forming the *Ekklesia,* two main choices must be made: choosing how many participants to use, and choosing how to go about selecting these participants.

5.1.1. Choosing the number of participants

In the Citizens' POLIS, although there need be no fixed number of participants, a number anywhere in the range of 6-25 is suggested. This is acknowledged as a broad range, but one which can subsequently accommodate the lack of consensus over the 'ideal' number of participants in group discussions, including those in virtual environments (Bloor *et al,* 2001: 92). It has been suggested in general terms that '6-8 individuals seems to be a good thumbnail estimate of the optimum group size' (Bloor et al, 2001: 92). In specific regard to CMC, it is acknowledged that larger numbers can be accommodated by the new medium (Stewart and Williams, 2005). This acknowledgement however, is made in particular reference to asynchronous rather than synchronous forms of CMC. Given that synchronous CMC is said to be more resonant of face-to-face communication than asynchronous CMC, it can be argued that any participant number which is considered 'optimum' for FtF communication may also therefore be considered 'optimum' for synchronous CMC.

It is important to bear in mind of course, that the deliberation in public participation processes is of course only one particular type of group interaction, and it is not necessarily the case that observations from other types of group interaction should necessarily apply. That is, it is not necessarily the case that what is considered 'optimum' for, say focus groups which are used in other areas of social research, should necessarily be considered 'optimum' for public participation processes. Bearing this in mind, in deciding how many participants to use, it is also useful to draw on the empirical experience of previous public participation processes. For instance, Smith and Wales (2000) suggest that deliberative participation processes are usually composed of between 12 and 24 members. The prototypical citizens' jury (Jefferson Center, 1974) used 12 participants, but many of the Jefferson Center's (2004) subsequent projects have used between 18-24 participants. The German *Plannungzellen* consistently use a

relatively large number of participants – 25 citizens per exercise. Finally, the consensus conference model uses a 14-person lay panel (Einsiedel, Jelsoe and Breck, 2001).

As with group-interaction research in general, there is some debate as to whether it is preferable to keep the jury small or whether a larger jury is more advantageous. Larger groups can allow for more perspectives to be included and therefore for potentially more diverse and rich deliberation. Having a larger number of participants allows for a more diverse sample and therefore for a more complex population to be represented. This allows for the claim to legitimacy to be strengthened (Blamey, McCarthy and Smith, 2000). However, since the quality of deliberation rests on participants having sufficient and fair opportunity to put forward their views, having any larger a number could prove counterproductive. As Elster (cited in Smith and Wales, 2000: 59) has suggested, in larger groups it is difficult, if not impossible, to engage in a coherent and systematic argument. This may be particularly the case in CMC groups, which are even more prone to 'interactional incoherence' (Herring, 1999) than FtF groups. Furthermore, it has been suggested that conflict is more likely (Blamey, McCarthy and Smith, 2000) and, often in such groups, a small number of dominant personalities over-contribute at the expense of less extroverted and confident personalities. This could be seen to result in asymmetrical deliberation and a democratic deficit. A small group on the other hand, 'reduces the scope for demagogy and allows all speakers to be heard' (Elster, cited in Smith and Wales, 2000: 59). One solution to the problems facing a larger group is to divide it into two or more subgroups. This could allow for greater efficiency and for a less intimidating environment for quiet or shy jurors (Blamey, McCarthy and Smith, 2000). Although it may be the case that in smaller group settings all but the most confident of deliberators would feel more comfortable contributing to discussions, it should not be thought that small group settings are immune to the problems posed by the presence of dominant personalities. Indeed, one might suggest that in smaller group settings a dominant individual may be able to exert even more influence over discussions, since in larger groups there are less people to interject if and when a given individual is dominating the discussions.

A way out of this debate is Levine and Moreland's (1998: 422) pragmatic suggestion that the optimal group size is context and task-specific. Depending on the medium across which deliberation takes place, the nature and breadth of the subject under

discussion, and how many viewpoints wish to be fed into deliberation, the social scientist can make an 'educated judgment' as to the number of participants that is considered desirable for a particular Citizens' POLIS. As will be discussed below, one must not forget that participants – or rather would-be participants – can themselves determine the exact final number of citizens constituting the *Ekklesia*, due to the inevitability of participant 'drop-out'. It is recommended then, that in the Citizens' POLIS, as in any participation process, the invitation of reserve participants is considered (e.g. Jefferson Center, 2004).

5.1.2. Identifying the population

The Citizens' POLIS is no different to any social science research project, insofar as one of the first things the researcher must do is to identify their target population. Unlike many projects however, the Citizens' POLIS does not have a clearly identifiable target population. Indeed, the difficulty for the organiser lies in the fact that, in many respects it is precisely those individuals who *cannot* be easily identified but who are sought after. As Lezuan and Soneryd (2008) have suggested, the idea of public participation, as distinct from other forms of public political engagement, is that those taking part have as few preconceived views and opinions about the (S&T) issue as possible. This is of course easier said than done. One of the main problems with the UK's *GM Nation?* Public Debate was that it was flooded and dominated by anti-GM activists rather than less partisan members of the 'general public' (Horlick-Jones *et al,* 2007: 160). As such, the identification of the target population must proceed inversely – that is, we should seek to include those who are not already 'interested' (that is, not directly involved) in the issue and preclude those who are already 'interested' (that is, directly involved) in the issue (cf. Coote and Lenaghan, 1997: ii; Mort, Harrison and Dowswell, 1999: 100).

Instead of targeting those individuals who would be eligible for participation study by virtue of the fact they fulfil a positive criterion (i.e. they are already involved in the issue), we are instead targeting those who are eligible by virtue of the fact they instead

fulfil a negative criterion (i.e. they are not already involved in the issue).[37] Of course, there are no general criteria through which to determine whether someone is 'interested' or 'involved', and this need be done on a case-by-case basis. How this was done in the case of the Citizens' POLIS on MTRH will be dicussed below. It is worth pointing out of course, that to not be 'interested' in an issue is not to say that one is not affected by it. For example, although we are all affected by the outcomes of debates surrounding the issue of global climate change, that it not to say we are all deeply and actively involved in those debates.[38]

Taking this into consideration means that we cannot use the type of sampling used in many projects in which there is a readily identifiable (interest-oriented) and easily targeted population.[39] Rather, there is a need to employ some type of 'screening' mechanism during the recruitment process, whereby those who are have vested interests in the issue itself are identified and excluded (cf. Lenaghan, New and Mitchell, 1996: 1593). An example of how this can be done in practice is discussed below, in reference to the Citizens' POLIS on MTRH.

Chapter 4 discussed how the idea of a monolithic general Public has been problematised by the critical analyses of STS scholars. However, whilst the latter's arguments are to a great extent sound, particularly in an age of growing societal complexity and social diversification, they should not encourage us to dispense with the idea of larger publics entirely. There is no question that myriad local publics co-exist, many of which overlap

[37] A quick note is necessary to emphasise that this is not to say that the views of those actors who are involved in the issue should be excluded from the debate as a whole – far from it. These views however occupy a different role within the overall debate. As well as being fed-into the citizens' deliberation as evidence, they also serve important functions in other types of political (inter)action, to which as suggested previously, public participation is a useful supplement. It is important to reiterate here that one of the main purposes of a public participation processes is to create a space within which strong views can be formed in a *reasoned* and *dialogic* manner. It is of course not impossible to conceive of a consensus forming within deliberation amongst a group of partisan citizens with strong, conflicting views. It is arguably unlikely however, and misses the point of public participation processes, within which citizens are supposed to give *all* types of evidence from *all* different viewpoints *equal* consideration – something which is unlikely to happen if the participants already have unusually strong preferences as to which viewpoint is the most convincing before the participation has commenced.

[38] That is, although any consequences of climate change will of course be of consequence to us all (as inhabitants of the world), not only as a society, but also as individuals, not all of us voluntarily become politically 'involved' in these debates – either due perhaps to a lack of knowledge (i.e. not knowing about climate change) or to a lack of mobilisation (i.e. not being sufficiently 'moved' to actively confront the issue in political settings).

[39] If, for example, we wished to arrange a focus group using participants who were mobile phone activists, then we could have taken a sample from our target population – i.e. 'mobile phone activists' – through obtaining comprehensive lists of members of mobile phone activist organisations and groups.

and are transient in nature. However, this is not to say that members of such publics have only one identity and are defined by one criterion. A simple example would be that it is possible for an individual to identify themselves as being part of the Cardiff public at the same time as identifying themselves as being part of the Wales public, at the same time as identifying themselves as being part of the UK public. When speaking of publics in everyday parlance, most people usually only have in mind a national public. When social scientists speak of publics, they know that such a conception on its own is too reductionist. That is not to say however, that the idea of a national public is intellectually redundant; rather we must simply bear in mind that individuals belong to other publics *as well as* their national public. The point made here is that in identifying the target population, the social scientist must bear in mind the most appropriate public from which participants will be recruited. In turn, that which is deemed the most appropriate public will depend on the issue in question. This is something that Smith and Wales (2000: 57) argue also. It stands to reason that issues which are of a local nature will look to a more local public. Conversely, issues which are of a more national or international nature will look to wider (national or multi-national) publics.

As discussed in Chapter 2.2., Dewey was of the opinion that a public is 'sparked into life' by virtue of its engagement with an issue. As was argued, we might see the participants in the Citizens' POLIS as forming a public unto themselves - around the issue in question. However, because their identity as a public can, in this respect, only develop after they have been recruited and once participation has begun, it is of course necessary to conceive of them as being part of a pre-existing public or publics. As such, it is suggested that the size of the public from which a sample is to be recruited should reflect the size of the issue (e.g. a provincial sample for more localised issues and a national or multi-national sample for national or global issues).

Since it is an electronic participation process, it is likely that in most cases, the Citizens' POLIS will be most useful for deliberation on issues which are of national or international rather than a local nature (see Chapter 3.3. and Chapter 9.5. for further discussion of the potentials of electronic participation). However, the more 'global' the issue, and the more multi-national we want our sample to be, the more difficult it is to identify our target population, and the more problematic our subsequent sampling strategy will be. This is due to the logistical and economic disincentives of doing so.

However, such difficulties should not overshadow the obvious advantages that are to be had from international deliberation and should not therefore dissuade the social scientist from considering using a multi-national sample. There are many ways in which this could be explored. It is of course impossible to conceive of a single Citizens' POLIS in which all countries are represented, a multi-national Citizens' POLIS might simply involve using participants from two or more countries. Beyond this (and with the usual caveats related to time and resource applying), future research could explore the possibilities of running a multi-group Citizens' POLIS on a single issue (where each group is composed of representatives of different nationalities). To probe the nature of muti-national deliberation further still, we might conceive of a multi-group and multi-round Citizens' POLIS, in which there is a total pool of participants, and a series of 'rounds' of deliberation (covering a single issue) where each round entails a different combination of citizens. This is obviously more complex, but might provide some interesting findings as to whether and how different groups of participants interact within the process to produce different or similar findings and decisions. Without wishing to indulge too far in the potentialities of the Citizens' POLIS (before the current case has even been fully discussed!), it is also worth noting that such multi-group and multi-round deliberations would not need to necessarily take into account nationality only, but could be arranged according to other criteria (demographic or otherwise).

Aside from the possibilities of a more complex Citizens' POLIS, there is still a problem which must be confronted by even the simplest of electronic public participation processes. Of course, once we have identified our overall target population – through determining the breadth of the issue and through 'screening' all those directly interested in the issue – the next stage is to work out the *accessible population.* The accessible population as the name suggests is all those individuals within our overall target population that we can realistically expect to obtain access to. Traditional FtF participation processes usually rely on participants being sampled from a given set of data – for example, an electoral roll or telephone directory (e.g. Jefferson Centre, 2004) – with those recorded on this data set constituting the accessible population. Whilst this in itself excludes certain groups or individuals – namely those whose details are not recorded on that data source, such as those not eligible to vote, or those not listed in the telephone directory – the majority of the overall target population could be accessible

through such means.[40] The Citizens' POLIS however, as an electronic public participation process, encounters added barriers to participation (as noted above, and as discussed in Chapter 3.3; see also, Norris, 2001), related to the fact that certain groups and individuals within society do not have access to, or do not have the capability to use, the technology required for participation. Also, there is the added problem for the organiser that, unlike local and national FtF participation processes, there are no readily available (publicly accessible) comprehensive lists of all the internet users in, say a given city or country. As such, any eligibility criteria for participation must include 'access to internet' and 'capability to use internet' – criteria which despite being undesirable (because they exclude certain individuals/groups) are nevertheless unavoidable. Until, or rather *unless,* it becomes possible to overcome the problems caused by technology-related inequalities – a problem which is far beyond the scope of this thesis (and which in terms of implementation is beyond the reach of academic research alone) – any population from which a sample of participants can be drawn for the Citizens' POLIS is necessarily a population which is already an 'online population'.

In organising a Citizens' POLIS, the social scientist must give thought to how to access their online population. The main implication is that the types of classic probabilistic sampling used by organisers of traditional FtF participation processes are not as readily available to the organiser of a Citizens' POLIS, or other electronic participation experiment. The next section will discuss how, the difficulties of defining the population in a Citizens' POLIS influence practical decisions related to the sampling strategy employed.

5.1.3. Sampling

In traditional FtF participation processes, it is usually taken as given that the citizen participants should be recruited via a sampling technique which is in some way randomised and which is in some way stratified (quota-based) (Coote and Lenaghan, 1997; Deinel, 1999; e.g. Pickard, 1998; Iredale *et al,* 2006; Bennett and Smith, 2007). It is argued that this is the best method by which to ensure that the jury is a 'microcosm' of society (Moldrup, 2002; Jefferson Center, 2004; Wakeford, 2002) or at least 'broadly

[40] As an example, Cohen (1989) cites the homeless who, despite accounting for a less than insignificant proportion of the population, are not considered in such selection processes.

representative' of their particular community (Lenaghan, 1999). Random-stratified sampling is a type of probability sampling. It is a technique premised on the 'logic of proportionality' (Smith and Wales, 1999: 300), insofar as the there is an intention and a belief that the socio-demographic composition of the participating sample should 'mirror' the socio-demographic composition of the wider (designated) population.

The Jefferson Center (2004) has provided a detailed exposition of how their sampling strategy works in practice. A professional survey company is employed in order to select a random sample of the defined target population (usually a city or state). All those in the sample are then invited to complete a questionnaire (over the telephone or by post) which contains all the information that is required and can be used for stratification. Those who complete and return their questionnaire have their details inputted into a database, and each is allocated a case number, which is then placed on a 'selection grid'. The selection grid is structured according to the various criteria on the questionnaire. Primarily, common demographic categories, such as gender, ethnicity, age and educational status are used for stratification, although added to these can be more specific purposive categories, including attitudinal categories (which stratify people according to, for example, their political orientation). Those organising the citizens' jury then attempt to select their desired number of participants according to their desired target numbers for each category. In proportional sampling, the sample composition should be roughly proportional to the target population. The number of individuals used from each category within each stratum should therefore be proportional to the same category of the population as a whole. For example, if a population is composed of 50% male and 50% female, then a citizens' jury with 12 members overall should be composed of 6 males and 6 females. The task is to find a combination of participants which match *as far as possible* the target proportions and which therefore reflect *as far as possible* the composition of the population as a whole. This inevitably involves some subjective work and trial-and-error on the part of the selectors - i.e. deciding how to 'mix-and-match' the jurors.

In a Citizens' POLIS, there is a tension between how one might sample given the choice and how one can feasibly sample in actuality. The remainder of this section will argue that random-stratified sampling can be seen to be the most justifiable technique in ideal terms, but not a feasible technique for electronic public participation processes in

practical terms. Random-stratified sampling can be considered the most justifiable technique in ideal terms, on the basis of two main principles, or 'appeals': *the appeal to political usefulness* and *the appeal to democratic legitimacy.* Firstly, it is generally acknowledged that any research aiming to be policy-relevant – or rather *policy-useful* – must guide its sampling strategy according to questions such as: 'how should one select a sample which can best represent the population' and 'how do we judge whether the sample represents the population well' (Henry, 1998: 11)? Participation processes - as forms of sociological inquiry (See Chapter 2) which aspire to be policy-useful – therefore guide themselves according to the principle of representativeness, otherwise understood in terms of external validity (generalisability). Put simply, this principle of external validity dictates that when we use a form of random probability sampling, we can reasonably assume that whatever we find within any given subset (of that specific population), we can generalise it to the wider population (i.e. any other subset would also likely produce *similar* findings).

The ability to generalise is seen to be important since, in the eyes of policymakers, not being able to relate one's findings beyond one's immediate sample is seen as inadequate in terms of providing information to influence policy (Henry, 1998: 23). Secondly, it is commonly felt that any participation process which claims to be democratically legitimate should systematically provide for the inclusion of minority voices (as far as possible).[41] This entails a sampling technique which not only selects its participants at random, but also selects them according to predetermined criteria – criteria which take into account various demographic (and sometimes also purposive) variables that are seen to proportionally 'reflect' the population from which the sample is being drawn.

Random-stratified sampling is not without its challenges however; challenges burden of justification. There is a need to decide and justify why certain stratification which are both theoretical and practical. Firstly, as the citizens' jury illustrates, the stratification

[41] The German *Plannungzellen* however, uses a 'pure' (non-stratified) form of random sampling. Some advocate this as a better strategy than random-stratified, because no one has been *systematically* excluded (Smith and Wales, 2000, emphasis added). For instance, it has been suggested that the samples used in these processes have been no different to the US Citizens' Juries which use random-stratified sampling (Stewart, Kendall and Coote, 1994: 23). If this is the case however, then it is not through any *systematic* attempt to derive a group of citizens which represent the variety of perspectives in a complex society. Nevertheless, the *Plannungzellen* do also emphasise the benefit of selecting people 'from across the social spectrum', which 'mirror the social composition of the populations from which they are drawn' (Deinel, 1999: 83, 84).

process entails some subjective work on the part of the researcher(s) as well as an added criteria were used (over other possible criteria). Stratification, some suggest, encourages the use of 'false essentialisms', which might encourage us to view intrinsically heterogeneous categories such as 'gender' as displaying a collective and single position or perspective (Smith and Wales, 1999). In using a stratified approach, the researcher must be prepared to justify why they believe stratifying according to, for example, gender or age (etc) is important - as opposed to other criteria which could have been used. They must also account for why individuals' views might be likely to differ according to variations within and across these criteria. These challenges could be obviated or 'transcended' through the use of simple (non-stratified) random sampling, which does not require the use of stratification criteria (Smith and Wales, 2000: 57). The problem with this method however, is that there is a statistical possibility that 'minority groups could be [unintentionally] excluded from the process altogether' (Smith and Wales, 2000: 57).

It is clear that the opinions which an individual develops *within* deliberation should not be causally reduced to the pre-existing socio-demographic criteria which can be applied to them. To do so is to negate the very purpose of deliberation, which is concerned with how participants' opinions are the product of a collective process and a product of which is causally related to that process *per se.* As Levine and Moreland (1998: 423) suggest, the 'composition effects' pertaining to attitudes, knowledge and personality which develop during the participation process negate the significance of the original selection criteria. Fundamentally, the use of these criteria rests on the idea that it is *not* possible to say that such categories *do not* have at least some impact on the opinions which they bring *to* deliberation. In short, random-stratified sampling is theoretically the most justifiable way in which we can promote equality and diversity within deliberation, and can at the same time make the process more attractive to policymakers.

Whilst random-stratified sampling can hold its own against theoretical challenges, it is more likely to come unstuck as a result of more practical challenges. To begin with, this technique can be expensive and time-consuming, and is also quite complex compared to other techniques. It is certainly not essential for a public participation experiment to use this method. Ultimately, as Murphy and Dingwall (2003: 106)

suggest, the choice of sampling strategy, in both qualitative and quantitative research projects is more tied to practical than to conceptual issues. They suggest that such choices are 'pragmatic' ones.[42] Similarly, in outlining a 'practical sampling' approach, Henry (1998: 32) suggests that choosing between probability and non-probability sampling approaches is a matter of weighing the requirements for [external] validity against a *realistic* assessment of the requirements for timeliness and effort of the alternative approaches (emphasis added).

In the case of the Citizens' POLIS, the main problem (as discussed above) stems from not having a readily identifiable population from which to take a probability sample. Because we do not have access to all the units in a given population (e.g. all the internet users within a given population/public) then it is not possible to perform random-sampling in its true form. We would neither possess the necessary information about the population by which to randomise it, nor by which to stratify it.

Non-probability sampling of course cannot claim to be externally valid in the same way that probability sampling can. Because of the absence of randomisation, this implies that some sections of the population are more likely to be selected than others (Bryman, 2004: 87). One cannot escape the charge that using non-probability sampling allows more room for researcher bias to affect the composition of the *Ekklesia*. One can respond to this however by re-invoking the earlier argument, which sees the social scientist as being best placed to organise public participation processes. Again the logic here is straightforward: if researcher bias is to enter into the sampling strategy (as in other stages of the research process) then is it not better for it to be the biases of a more 'distanced' independent social scientist, than a more 'involved' stakeholder-employed social scientist?

5.1.4. The Citizens' POLIS on MTRH

It was decided that 10 participants would constitute a good number for the *Ekklesia*. Unlike in some public participation processes (e.g. Jefferson Center, 2004), the organiser did not intend to have a group of 'reserve participants'. It was however

[42] The term 'pragmatic' is used by Murphy and Dingwall (2003) as it is used in common parlance, rather than as it is used in philosophical parlance.

anticipated that, as with all research projects, there was a possibility that one or two participants would withdraw before the project began. As discussed above, previous research suggests that a group of anywhere between 6 and 25 participants would be workable, and so the possibility that a small number of participants might withdraw was not deemed a major problem.

The social scientist wanted to explore the potential of the Citizens' POLIS for multi-national public participation, and therefore decided not to restrict himself to recruiting participants from the UK exclusively. Deciding from which (and indeed how many) other countries participants should be drawn was a subjective choice. In this case, it was decided that using participants from one other country would be sufficient. It was however, a choice based on a couple of practical considerations. Firstly, it was necessary to take into consideration language differences. Because the social scientist was an Anglophone and because he wanted to use participants from the UK, it was decided that the *lingua franca* of the participation process was to be English. As such, it was necessary to consider countries within which English is either a first language or a fairly common second language. Secondly, because the research had Swedish colleagues and contacts, it was decided that this would be an advantage when trying to recruit participants. Furthermore, given that the Stage 1 interviewees were drawn from these two countries, it was felt that drawing citizen participants from these two countries might also work well. There was however, no definitive reason as to why this should have been the case, and participants could have been drawn from any countries in which there was generally widespread use of the internet and within which there was a significant proportion of Anglophonic citizens.

It was also felt that using participants from the two countries would prove interesting due to the differences between the two countries in terms of their 'cultures' of scientific governance (STAGE, 2005).[43] Although this was an early research question, as was noted in Chapter 1, it was later decided that although the data could be used to compare

[43] The STAGE (Science, Technology and Governance in Europe) Report (2005) found there to be a number of different 'cultures' of S&T governance between different European countries. In the UK, as discussed elsewhere (see Chapter 4), trust in science policy institutions has been low since the BSE controversy. This has led to the UK being at the forefront of debates concerning more open, transparent and 'democratic' scientific governance. Sweden, by contrast has seen a shift back towards a more technocratic model of S&T policymaking. In general, public trust in the authority of science policy institutions was found to be much higher than in certain countries, including the UK.

cross-national responses, this was deemed beyond the scope of this thesis, since other research questions were deemed more pressing.

The Citizens POLIS on MTRH used a form of non-probability stratified (quota) sampling.[44] Since the Citizens' POLIS is an electronic public participation experiment and participation would take place online, it was felt that using online means through which to recruit participants was appropriate. There were two main reasons for this choice. Firstly, it was due to the practical reason that, to do street-level or face-to-face recruitment in Sweden would have proved costly and time-consuming for the social scientist. Telephone sampling would have been another option, but this is generally seen to be a quite intrusive method of recruitment, and a method which the social scientist preferred not to use for this reason. Secondly, the rationale for online recruitment was that since those who were able to participate would need to have existing access to the internet, offline methods were deemed inefficient. Such methods, for example street-level or telephone canvassing might lead to a sample wherein some of the potential participants did not have existing access to the internet. Naturally, here we must refer back to earlier discussion on the subject of (in)equality, specifically in terms of the 'digital divide' (Norris, 2001) (see Chapter 3.3. and Chapter 5.1.2.). The problems with online sampling relate to wider difficulties in using CMC to generate a sample which allows equal access, given those who do not (for whatever reason) use the internet would not have had an opportunity to participate in the research. A related consideration here is whether internet users are more likely to engage with issues related to technology and risk. Of course the technology being discussed under discussion, mobile telephones, is a different one to that which is used to facilitate the discussion itself (internet and possibly WiFi). The technologies are of course related, and so it is important to note that there may have been some bias in regard to the selection – technology users are hypothetically more likely to engage with issues discussing technology. This is related to the broader concern of self-selection bias. It was decided that a realistic solution lay in accepting that an element of self-selection would need to enter into the sampling process. Due to the absence of a population list or data, it was

[44] For the pilot Citizens' POLIS, simple opportunity/ convenience sampling was used. This was due to it being the quickest and most convenient sampling technique. Adverts were placed on a social networking site, requesting volunteers for the study. The obvious shortfall of this non-random technique was that those taking part would in some way, directly or indirectly, know the researcher, and possibly each other (such sites are online "social utilities" where existing real-life contacts can communicate electronically).

deemed necessary to advertise for participants in the first instance. The social scientist posted 'participants wanted' advertisements on online 'free ads' – that is, user-generated content (UGC) advertisement websites (classifieds) (see Appendix C).[45] Before discussing the specific procedure in more detail, it is first necessary to note the limitations of this strategy. Potential participants could only be stratified and then selected at random from within these strata, *after* they had volunteered themselves as potential participants. In traditional FtF public participation processes, potential participants are usually invited specifically, and are then given the opportunity to accept or decline this invitation. In the Citizens' POLIS on MTRH however, a general invitation was made to all those who would read the relevant classifieds and those who wished to participate were able to make their interest known to the organiser. There is a need to acknowledge the possible sample selection bias which could result from certain types of individuals being more likely to respond to the advert than others. It is acknowledged therefore that this method of sampling is not without its limitations, but it is nevertheless seen as the most useful solution to the problems encountered in online participant recruitment.

A list of UGC classifieds in the UK and Sweden was drawn up. It was found that the UK had considerably more UGC classified websites than Sweden. However, it was decided that, to begin with, using one website for each country would be a sufficient start (since, it was felt that if responses were poor more sites could subsequently be used). The organiser used the largest (or at least best-known) online classifieds in both countries. These sites, like most UGC online classifieds, are split according to geographic location, usually according either to counties, or to major cities and their surrounding area. This is because often online classifieds are used to advertise offline commodities – such as products, services or job vacancies, meaning that people predominately search according to their local area. However, because this research was itself online, it was not bound to recruiting participants from a particular area. Indeed as noted in Chapter 3.3., one of the advantages, and indeed purposes, of electronic participation is that it can, and should, transcend local and national boundaries. The organiser's desire to transcend national boundaries was already evident in his decision

[45] These are basically online analogues of traditional, printed 'free ads'. They are free both from the point of view of the advertiser and those reading the adverts. They are basically UGC websites, where users themselves post other messages (i.e. adverts) for other users (although website moderators usually screen the adverts within a few days of them being posted to make sure they meet legal requirements and conditions of use).

to use participants from both the UK and Sweden. In addition to this, the organiser saw no good reason as to why those participants from a given country should come from the same area – that is, from the same county or city. As such, the same advert was posted on four different communities - two within the Swedish classifieds and two within the UK classifieds. The communities chosen were Stockholm, Gothenburg, London and Cardiff. There were various reasons as to why these particular communities were chosen, some of which were subjective (Cardiff for example was chosen because it was the organiser's local community). The main reason they were chosen was because they were (Cardiff aside) the largest cities to choose from. It was assumed that the larger cities would have larger online communities (to reflect their lager total offline population) which would in turn lead to the researcher receiving more responses and having a larger sample to select final participants from. However, because, it is usually only the major cities which tend to be well-represented on such advertisement websites, it is important to consider how, as a result, potential participants from smaller cities or rural communities are unintentionally excluded through this particular sampling method. This suggests that additional methods of advertisement might be considered in future, which could specifically target 'hard-to-reach' subsections of the online population (it should be noted that this is a separate issue to those raised previously in regard to the problem of reaching those who are not already part of an 'online population'.

Initial advertisements that were placed on electronic 'free ads' sites did not offer any compensation for participants. As discussed elsewhere, it is felt that participants in the Citizens' POLIS (as in all participation processes) are performing a series of tasks, and should therefore be compensated for this. However, in the first instance, the organiser wished to informally 'test' whether or not participants would volunteer without the offer of compensation. No replies were received in regard to this initial advertisement. This suggests that the ideal of the 'altruistic citizen' who possesses an inherent sense of 'civic duty' is perhaps somewhat unrealistic.

Based on the experience with the Citizens' POLIS on MTRH (further experimentation could, as always, suggest otherwise) it could be argued that on the whole, inherent motivation for participation is hard to find. This relates to earlier argument in the previous chapter concerning the scarcity of examples of citizen-led participation

processes. Whilst it is certainly not to be suggested that all citizens are politically inactive – indeed many examples of 'civic consciousness' exists – it is perhaps the case that such consciousness usually chooses to manifest itself through more direct 'picket-fence' activities, such as protest and petition. The lack of interest generated by the initial advertisements contrasted markedly with the interest generated by the second, follow-up advertisements which this time offered compensation to participants (see Appendix C).[46] The second set of advertisements received 177 responses over the 3 day period following their posting. More responses were received after the first few days, but at a decreasing rate thereafter. It was decided that 177 was a sufficient sample with which to work with.

A short questionnaire was sent, , to these potential participants, and further questions were asked via email.[47] The purpose of the questionnaire was to acquire the relevant information about the participants (much of which in traditional FtF participation processes would already have been obtained from the Census data/electoral roll). Also, because (as discussed above) the organiser wanted to try as far as possible to avoid recruiting participants who had strongly partisan views or a pre-existing involvement in the issue, it was necessary to ask questions in this regard. As such, participants were asked about their existing views on mobile telecommunications technology. They were also asked via email correspondence to disclose if they had any affiliations to the following: the mobile telecommunications industry, any relevant scientific or political agency related to mobile telecommunications, or any activist, NGO or other public interest group related to mobile telecommunications. None of the participants disclosed (or were found to have) any affiliations with any of these stakeholder groups. Additionally, it was thought that including a purposive variable related to the participants' technology use might prove interesting. The questionnaire therefore sought to obtain both basic demographic data and more purposive data. The questionnaire is provided in full in Appendix D. Final participants were required to

[46] The decision to offer participants compensation was made following a discussion with supervisors, colleagues and members of staff in the relevant administrative offices in the researcher's home department.

[47] At this stage it was made clear to these potential participants that the researcher needed a completed questionnaire in order to select a final group of participants. It was stated that not all of those who expressed an interest in participating would be able to take part in the research. It was also stated that although those who were selected to take part would be compensated, there was no compensation being offered for completion of the questionnaire itself – which was voluntary, and was to be considered as an 'invited application' for the Citizens' POLIS.

complete a consent form, after being provided with an information sheet detailing the project and the organiser's adherence to all the usual ethical conventions (see Appendix E for more details).

5.2. Stage 2: Setting the agenda

5.2.1. How is the agenda set?

Setting an agenda is important to the Citizens' POLIS, as it is to any participation process, because it guides the subsequent processes of evidence production and presentation as well as the deliberation itself. Deeper questions of why a participation process needs an agenda and who should set it are discussed in more detail below. First however, it may first be useful to give a brief and practical overview of what an agenda is and how it is set specifically in the Citizens' POLIS. This will be followed up with empirical reference to the Citizens' POLIS on MTRH.

The agenda-setting process in Citizens' POLIS is analogous to the framing or 'mapping' performed at the beginning of most social research projects. That is, through his or her 'background' research, the researcher becomes familiar with their substantive field of study, and with the salient themes, positions and arguments within it. In the current context, such mapping can be used to help set the agenda of a Citizens' POLIS. By reviewing the existing literature on the particular field of study, the researcher can derive an overview of the issue at stake. Conducting an extensive literature review is a difficult and time-consuming task, and (as suggested in the previous chapter) this is one reason as to why the social scientist is well suited to the organisation of the Citizens' POLIS. It will no doubt be common for the social scientist to already be researching that substantive area, and will as such have extensive knowledge of that area. Otherwise, as social scientists it is argued that they possess both the skills and resources to acquire such knowledge. Based on this knowledge, the social scientist is able therefore to make the initial, but *provisional*, decisions as to what sub-areas of an issue are to be considered most important. Those areas to be discussed then determine what evidence will be needed and who and where it should come from (see Stage 3).

5.2.2. Why do we need an agenda?

In the ancient Athenian *Ekklesia,* a specific agenda was prepared for each meeting. This served to limit the day's discussion to those items that were placed on the agenda (Gordon, 2002). As with any form of group interaction which is structured, or even partially structured, around a particular issue, deliberative participation processes need to have some initial focus or direction as to what exactly a discussion about that issue should entail. In a basic sense, setting an 'agenda' in a participation process is therefore not too unlike setting an agenda in a corporate meeting – a meeting is called to discuss a given issue, and beforehand all those attending the meeting are usually given a list of 'topics for discussion'. The 'agenda' of a participation process is therefore essentially a list of the topics or 'sub-issues' which are to be the foci of the participants' deliberations. Of course, the agenda in a participation process differs to the agenda of a business meeting primarily due to differences in the respective aims of those types of group interaction. Whilst in the latter the focus is on discussing concerns related to that particular business or company, in the former, the focus is on discussing far broader concerns related to a local community or to a whole country or countries. In cases where participation processes are focused on broad societal concerns, the need to set an agenda and to structure deliberation in some way is particularly necessary. The issues which characterise our 'risk society' are vast and complex. Attempting to discuss 'global climate change' for example is an onerous task, due to the sheer magnitude of the issue.

In accounting for the usefulness of an agenda, it is possible to question how feasible it would be for deliberation to be entirely unstructured. Two points are worth making here: Firstly, deliberation is no ordinary form of discussion. By definition, the term 'deliberation' refers specifically to formal discussions on an issue, in order to derive a decision or set of decisions in regard to that issue. It is of course recommended (see also Chapter 4) that participation processes retain a degree of flexibility, so that the all aspects of the deliberation, including the very constitution of the issue itself, can be redefined during the process. However, in order to distinguish deliberation from other forms of group interaction, there is a need to focus on a given issue. As discussed previously in this chapter (see section 5.1.), participants in the Citizens' POLIS become participants by virtue of the fact they have little pre-existing knowledge and no direct

'interest in the issue under deliberation. As such, it is unrealistic to expect them to be able to structure the participation process themselves *from the start.* Failing to have any structure to the participation process could mean that the 'deliberation', like the unstructured focus group, veers into areas which can be considered at best tangential, and at worst irrelevant, to the issue at stake. To the social scientist, such tangentiality might indeed be of interest (since s/he could analyse in sociological terms not only how and why the new subject was broached but also the new subject per se). To the policymaker however, such tangentiality is unlikely to be of interest, and depending on *how* tangential it is to the issue at stake, is likely to be considered irrelevant.

It should be noted however, that some manoeuvrability around the provisionally framed agenda is not only possible, but is to be encouraged. This allows for the Citizens' POLIS to avoid the pitfalls of those exogenic participation processes whose narrow frames constrain the freedom of participants within the process (see Chapter 4). As well as discussing narrower issues such as 'how should we regulate research on genetic engineering?' we should also be discussing broader issues such as 'is genetic engineering in the best interests of society?' Unstructured conversations, by their very nature are unpredictable in terms of the issues they will address. So whilst a conversation could begin by discussing the regulation of genetic engineering, it could move towards discussing the sale of genetically modified food in high street supermarkets, before moving to discussing the ethical practices of supermarkets, before moving to discussing supermarkets, shopping or even food in more general terms! This is an example of a fairly logical transition from specific subject matter to far more general subject matter. However, not all discussions proceed so logically and so at times entirely unrelated subjects might enter into the conversation. The point to be made is that, whilst those responsible for implementing policy or practice on genetic engineering regulation would be interested in the first line of discussion (and possibly the second also), or whilst those responsible for regulating the sale of GMO foodstuffs to the public would be interested in the second line of discussion (and the first more generally), it is unlikely that either would be interested in the third lines of conversation related to supermarkets, shopping or food in general. As noted previously, it is important for public participation processes to be considered useful and relevant by policymakers. To do so, it is important that deliberation addresses policy-relevant issues. Deliberation is more akin to the *semi*-structured focus group, in which the

facilitator works to keep discussion focused around a given issue without dictating beyond this, its content and direction.

5.2.3 Do we need a steering group or a 'guidance counsellor'?

In the Citizens' POLIS the 'guidance counsellor' plays a key role in the organisation of the process, in particular in setting the agenda and in facilitating the citizens' deliberations. Guidance counsellors are used in the Citizens' POLIS either in place of or in addition to the 'steering groups' as used in traditional Citizens' Juries (e.g. Crosby, 1995; Dienel, 1999; Wakeford, 2002; Jefferson Center, 2004). It is important to distinguish between the two roles and to note that the distinction between 'guidance' and 'steering' is substantive and not merely semantic.

Generally speaking, the members of steering groups are chosen based on an acknowledgement of their technical expertise. They have, over a period of time been immersed in and integral to the area(s) of scientific research which the citizens are to discuss from a public perspective. In setting the agenda, the members of the steering group are expected to harness their collective knowledge to determine which issues and questions are most important and therefore most worthy of public attention and engagement.

Whilst it does not argue against its possible value, the Citizens' POLIS does argue against the necessity of a steering group. As discussed in the previous chapter, and as argued throughout this thesis and elsewhere (Williams, 2010), the organisational role of the social scientist is integral to the effectiveness of the Citizens' POLIS as a participation process. This is because s/he is comparatively 'detached' from the scientific issue *per se* (they are instead interested in citizens' *perceptions* of the scientific issue). The individual scientists and other 'experts' who ordinarily constitute the steering group of a Citizens' Jury process are all involved in some way with the scientific research or policy or practice in the given S&T area. As such, we can classify them as 'interested' stakeholders. The idea of a steering *group* of course, is that rather than having one individual subjectively steer the process, there are a number of individuals working together to *intersubjectively* steer the process (i.e. in order to negotiate, mediate and compromise between their various positions and biases). It is

argued here however that this is, on its own at least, unsatisfactory. A number of questions arise: Firstly, there is a need to decide *who* should constitute the steering group, and indeed whose decision this should be. Usually this decision is made by the overall organiser(s) of the participation process. Where processes are *exogenic*, there is the danger that the sponsors themselves will choose who sits on the steering group. The criticism here of course is that the sponsor, influenced by biases which stem from their vested interests in that issue, will choose (consciously or subconsciously) experts who share, or at least sympathise with, those interests. Secondly, and more fundamentally problematic, is the question of which experts should be used to form the steering group and which should be used to provide the testimony for the citizens. Moreover, there is the related question of whether these roles are indeed mutually exclusive. It may be argued that these roles *are* mutually exclusive, since they present a conflict of interests. One can compare this situation to that of a legal trial wherein the procedural arbiters – perhaps the judge himself or herself – cannot also testify as an expert witness. If it is unreasonable for such a dual role to exist in a legal trail then it is arguably unreasonable in a public participation process such as the Citizens' Jury or Citizens' POLIS. As noted above, the salient criterion by which an individual qualifies for the steering group is whether or not they are deemed to have sufficient technical expertise in the issue under discussion. However, a corollary of possessing such technical expertise is that they can also equally be considered as an expert witness (and could therefore be asked to produce expert testimony).

As a result of these problems related to definition and conflict-of-interest, it is deemed necessary that the Citizens' POLIS consider a viable alternative (or at least supplement) to the steering group as used in the traditional Citizens' Jury.

5.2.3.1 The difference between 'steering' and 'guiding'

The main difference between the agenda in the Citizens' POLIS and the agenda in exogenic participation processes which use steering groups, is that in the former (unlike the latter) the aim is not to 'steer' at all. The verb 'to steer' is commonly defined as 'the act of *directing* the course of, for example, a vehicle or vessel in *a particular direction* (Merriam-Webster, 2009)'. Such a definition nicely captures the limitations and criticisms of the exogenic model of public participation. Firstly, to imply that a

participation process is a vehicle or a vessel (and one which can be steered) is to deny those within it any agency. Such language resonates with the arguments of Jasanoff (2003) and Irwin (2001), amongst others, that exogenic participation processes can be seen as tokenistic legitimation devices (or vehicles) (see Chapter 4). Steering suggests movement in a particular direction; it connotes a certain predetermination. Conversely, Dewey's (Boydson, 1990: 222) assertion that 'guidance can be an aid to freedom rather than a restriction upon it' has quite different connotations. Guidance can be thought of as the act of assisting people to find their own way. The verb 'to guide' can be defined as 'the act of assisting (a person) to travel through, or reach a destination in, an unfamiliar area, as by accompanying or giving directions to the person' (Merriam-Webster, 2009). The verb 'guide', although it might *prima facie* appear synonymous, differs greatly to the verb 'steer' following some critical reflection. Whilst the latter is directive, the former is assistive. Subsequently, the agenda in the Citizens' POLIS is intended to be *assistive* whilst in exogenic participation processes it is intended (or is at least successful in being) *instructive*.[48]

In the case of public participation, the reference to guidance taking place in an 'unfamiliar area' is particularly pertinent. As is discussed throughout this thesis, to qualify for the panel/jury in a participation process, citizens should not already possess a high level of knowledge of, or interest in, the issue at stake (otherwise they should instead be considered an expert). However, as will be discussed in more depth in the following section, the Citizens' POLIS also aims to allow and encourage citizens to have greater input in, and control over, the specific topics they wish to discuss. Before they have acquired the confidence and the knowledge to do so however, the citizens need to be guided; that is they need to be familiarised with a hitherto unfamiliar subject. Guidance in this sense involves the provision of advice and resource so as the citizens can make an 'informed' decision as to the topics they wish to discuss in the Citizens' POLIS. This is deemed preferable to them simply being told what to discuss by a steering group. Guidance *vis-à-vis* steering therefore affords the participants more agency in the determining what is to be discussed.

[48] Further articulation of the difference between instruction and indication is necessary. Instruction can be thought of as the systematic education or direction of a person. It is synonymous with the concept of tutoring or coaching (see for example, http://dictionary.reference.com/browse/instruction). Assistance on the other hand can be thought of as a less systematic, less directive and more general form of support. It is more synonymous with the concept of supervision or mentoring (see for example: http://dictionary.reference.com/browse/assistive).

5.2.3.1. The social scientist as 'guidance counsellor'

Guiding citizens in setting the agenda is therefore one of the specific tasks of the social scientist-as-organiser in *mesogenic* participation processes like the Citizens' POLIS. We might conceive of the social scientist therefore as a 'guidance counsellor', and thus in replacing an *exogenic* model of participation with a *mesogenic* model of participation, we can replace the role of a steering board with the role of a guidance counsellor or counsellors (where more than one social scientist is organising the process). One of the main ways in which the guidance counsellor differs from the members of a steering group is that the former, unlike the latter, does not necessarily possess any technical expertise *per se.* As argued in the previous chapter (see also Williams, 2010), social scientists are well qualified to organize public participation processes since they possess what Collins and Evans (2002; 2007) refer to as 'interactional expertise' (as opposed to 'contributory expertise'). This means that although they are ineligible as expert witnesses, they do have enough of a grasp of the scientific issue so as to help advise the citizens in their interpretation of the technical concepts and language. They are therefore well-placed to assist citizens in their choice of what specific topics are to be discussed, before the citizens have themselves acquired (through their participation in the Citizens' POLIS) a measure of interactional expertise.

In the educational setting, a guidance counsellor is involved in assisting a student to consider their possible career choices. They can advise a student on how they can set about becoming a lawyer, pilot, nurse or indeed a scientist or engineer. It is highly unlikely however that the guidance counsellor neither is, nor has been any or all of a pilot, lawyer, nurse, scientist and engineer. They do not have direct experience of these professions (or contributory expertise *a la* Collins and Evans (2002)). They do however have considerable knowledge of what it takes to enter into and succeed within these professions. Since they lack of direct experience of the profession itself, the guidance counsellor cannot tell the student wishing to become a pilot exactly what a certain profession entails, for he or she does not know.[49] What the guidance counsellor can do

[49] It has long been established both within the Sociology and Philosophy of Science, that 'being' a scientist cannot be understood through explicit knowledge alone. As Polanyi (1976; see also 2009) first argued, scientific work also entails the acquisition of 'tacit knowledge'. Thereafter, sociologists – most notably Harry

however, is to provide that student with the necessary information and advice for them to understand what is required to become, and succeed as, a pilot (i.e. information on what subjects to take in school and what personal skills are desirable) as well as how to search for further information (e.g. what books, websites and people to consult).

It is important to note that the guidance counsellor does not tell the student what they should become, nor do they tell the student how they must proceed in choosing a career. They do not tell the student that they should become a pilot – i.e. they do not steer them into becoming a pilot - but rather they assist the student to themselves realise that becoming a pilot is the best choice for them. They are of most use when there the student has not already decided which career they would like to pursue. Using the example of the school guidance counsellor, and in particular of the student as would-be-pilot, is a useful metaphor to apply to the Citizens' POLIS and to public participation processes in general. This is because the metaphor emphasises the agency of the participant (whether student or citizen) within the process. In keeping with argument in Chapter 4, it is perhaps naïve to assume that the citizens themselves could suddenly and independently decide to direct a participation process on an issue that they were not already personally invested or at least interested in. The agenda of a public participation process requires that the following questions be attended to: Firstly, 'what issue should be discussed?' Secondly, 'what sorts of problems and areas define or constitute that issue?' If they already know a great deal about the issue, then they should be excluded (for reasons discussed above) and if they know very little about that issue (assuming they were able to choose an issue in the first instance) then it is likely that the task of identifying important constitutive sub-issues would be overwhelming. This might in turn be prohibitive to their participation. It is an aim and a requirement of the participation process that those participating become more informed on the issue as participation progresses (see: Chapter 3.2.1.). It is this capacity of a participation process as well as its appeal to legitimacy which account for the need for what can be referred to as a 'reflexive imperative' to be built into the process.

Collins (1974; 1985) have shown empirically how tacit knowledge plays an important role in the acceptance or rejection of scientific theories and in the inclusion or exclusion of individual scientists from the 'core group'. Of course, the role of tacit knowledge as an important type of professional knowledge is discussed across a wide range of literatures, including the Organizational Studies literature (e.g. Brown, 2001; Wenger and McDermott, 2002).

5.2.4. The 'reflexive imperative'

In keeping with its Pragmatist philosophy, the agenda in the Citizens POLIS is provisional and adaptive, being subject to modification throughout the experiment. In this respect it is comparable to the agenda in a citizens' jury (Jefferson Center, 2004). What we might refer to as the 'reflexive imperative' of a participation process, allows changes to the agenda to be made by the organiser during their subsequent gathering of evidence, and by the citizens themselves during the course of their participation. As the citizens become more informed about the issue – that is as their knowledge of the subject grows –they are better placed, and indeed better equipped to determine which areas are the most significant in relation to that issue. As such, the organiser's interpretation of the issue, as manifest in the agenda, is not exempt from being challenged and changed. Building an element of reflexivity into a participation experiment caters for the inherent unpredictability of the processes of knowledge production and social interaction which are characteristic of all deliberative procedures. Assumptions, understandings and knowledge of a subject can, and most often will, change dramatically during the course of data collection and analysis. In the Citizens' POLIS therefore, the agenda can, and in many cases will, be adjusted (to varying degrees) following the first phase of system. Horlick-Jones *et al* (2007) have referred to this property – where one stage of engagement can inform and shape the next stage – as the 'translation quality' of a procedure. Whilst building reflexivity into public participation processes, it has been noted, is not easy (Kerr *et al*, 2007: 408), it is arguably imperative to at least try. Above all, the reflexive imperative puts into practice the appeal to democratic legitimacy and avoids the 'tyranny of [exogenic] participation' (Cooke and Kothari, 2001).

5.2.5. The Citizens' POLIS on MTRH

In the Citizens' POLIS on MTRH, the organiser was responsible for setting the initial agenda. Following a review of the literature on the subject, the substantive area was categorised, or 'mapped'. The following themes were highlighted as most prominent within the literature: 'base stations and risk'; 'biological effects'; 'cancer'; 'electrohypersensitivity' and 'the precautionary principle'. These sub-issues of the

debate are discussed in more detail in Chapter 6. The agenda was then used to outline a plan for gathering evidence which in diagrammatic form identified and linked together key actors and documents related to each sub-issue of the debate.[50] This will be discussed in the following section. Prior to their deliberations, the agenda was disseminated to the citizen participants via the Citizens' POLIS website (see Stage 4 for more details of this website).

5.3. Stage 3: Producing the evidence

5.3.1. What is evidence?

The term 'evidence' is often closely aligned with a scientific, positivist epistemology. It can be defined as being 'data upon which to base proof or to establish truth or falsehood' (Collins English Dictionary, 2009). Recently, the term has particular currency due to the popularity of Evidence-Based Medicine (EBM), which entails the application of the best available evidence gained from the scientific method to clinical decision making. The social sciences however are more accustomed to using the less positivistic term 'data' (which doesn't necessarily imply claims to truth or falsehood). However, looking at broader definitions of the term 'evidence', we might see it as 'a thing or things helpful in forming a conclusion or judgement' (Merriam-Webster, 2009) and as something which 'grounds belief' (Webster's College Dictinary, 2009). Perhaps the best way of distinguishing evidence from data is by thinking of the former as an applied form of the latter. That is, evidence might be thought of as data as applied to a particular purpose, such as a legal trial. A related definition of 'evidence' could then be: 'data presented to a court or jury in proof of the facts in issue and which may include the testimony of witnesses, records, documents, or objects' (Webster's College Dictinary, 2009).

Of course, as noted earlier (Chapter 2.2.1), the problem of induction (Popper, 1959) has shown how if we are to take proof as being knowledge beyond all *possible* doubt, no proposition can be ultimately proven. However, faith in the characteristics of science such as experimentation and replication shows how, if we are to take proof as being

[50] In many cases, those identified were actively involved in more than one (in some cases in all) areas of the debate.

knowledge beyond all *reasonable* doubt, it is possible to reasonably prove a proposition. Our understanding of the term 'evidence', as it applies to public participation processes such as the Citizens' POLIS, is not too far removed from its scientific definition. Deliberation in the Citizens' POLIS must be reasonable. That is, decisions made must be based on a consideration of the reasons behind that decision, in relation to possible alternative decisions and their reasons. These reasons of course must come from somewhere and be based on something. They cannot emerge spontaneously, purely because an issue is being discussed. Since those taking part in the deliberation must necessarily lack any pre-existing and direct involvement in the issue, these reasons cannot be based on any such involvement. Participants' reasons for or against a given decision must therefore be derived partly from their general knowledge and experiences and also from the specific information which they have been provided over the course of their participation. As such, if evidence is to be understood as a 'thing or things helpful in forming a conclusion or judgement', then that information which is provided to the citizens in the participation process can justifiably be referred to as evidence. However, it should be noted that the notion of proof in the Citizens' POLIS is more Pragmatic than realistic. In this respect, public participation as a form of experimental inquiry is far more tentative than science as a form of experimental inquiry claims to be.

To illustrate further how data becomes evidence in the Citizens' POLIS, comparison to the legal trial might once again prove useful. Like the citizens in a participation process, the jurors in a legal trial do not have any direct and pre-existing knowledge or experience of the issue. They should not themselves have any experience of what it is like to partake in a criminal activity (otherwise they would not be eligible for jury service). Moreover, they should not have been there when the alleged crime is said to have happened and should not therefore have any experience or knowledge of it prior to the case. Should they have any such prior knowledge or experience, then they should be more appropriately considered as being witnesses of the alleged crime. As suggested, the same applies in the participation process – anyone with prior knowledge and/or experience of the issue should be considered a potential expert rather than a potential citizen participant. In order to make a reasoned decision as to whether a person is guilty or not, the jury need to receive relevant evidence. The term 'relevant' can further help us to distinguish evidence from data. 'Relevant evidence' in the legal

context is officially defined as 'evidence which allows us to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence' (Federal Rules of Evidence, 2009). In preparing for a legal trial, legal representatives of both parties set about gathering information about the crime. This information, which is collected initially by the police and then passed to the representative lawyers, can be considered data rather than evidence. It becomes evidence in the context of the trial itself – because it is used to make a decision on a person's guilt or innocence.

Not all that information which is collected initially will be deemed relevant; that is, not all of it will be considered to impact on how the jury are to perceive the action (e.g. crime). This idea can be applied also to public participation processes. Evidence which can be considered relevant is data which it is thought is likely to impact on the citizens' perception of the issue which is to be the subject of their deliberations. As discussed previously, theories of endogenic participation are likely to argue that deciding what is 'relevant' to the citizens is something which only they themselves can decide. However, as the mesogenic model argues, this is perhaps more theoretically ideal than practically feasible. Jurors in the legal trial are not expected to collect evidence for themselves, nor are they considered capable of doing so. This incapability is largely due to the lack of time and resources at hand (trial preparations are of course extremely expensive and time consuming), but is also due to the fact that certain individuals are especially suited to and trained for this task – i.e. police officers and lawyers. The role of police offers and lawyers is the production and presentation of the evidence, whilst the role of the jury is in evaluating and passing judgement (i.e. forming a decision) on that evidence. As a result of these considerations, there is an obvious need for those producing and presenting the evidence, to use their discretion in choosing what evidence is to be presented to the jury – i.e. deciding from all the data (possible evidence) that they have collected, that which constitutes 'relevant evidence'.

To present all possible data on a given crime is not practical, and arguably, neither is it possible. The same holds true for public participation processes. As discussed previously, citizens neither have the time nor generally the means by which to collect a large amount of data on a given issue, of which they have no prior knowledge. Also, this initial lack of knowledge on the subject means that they would find it difficult to

justify their subjective choice of what constitutes 'relevant evidence'. At this point, it is important to distance the Citizens' POLIS from the legal analogy somewhat. Firstly, this is because, unlike the legal trial, evidence in the Citizens' POLIS does not necessarily need to be presented only in antagonistic terms – i.e. in terms of guilty vs. not guilty. In the Citizens' POLIS there can be many possible sides to an issue and many possible outcomes in the way of a decision, and the selection of evidence should reflect this. Of course, depending on the issue, there could be straightforward for and against arguments, which the evidence could then reflect, but the complexity certain issues means that identifying multiple 'sides' or perspectives is more appropriate. Secondly, the act of participation in itself, allows the citizens to be increasingly capable of re-defining what should constitute 'relevant evidence', in accordance with the reflexive imperative. The evidence provided by the social scientist is intended to be a rounded evidence-base upon which further self-directed citizen inquiry can proceed. Citizens are encouraged to seek out evidence themselves which they can share with one another, and which will supplement and augment that which has already been provided by the organiser. This is seen to extend their analyses of the initial evidence, in that further inquiry proceeds based on the citizens' assessments of the usefulness, significance and trustworthiness of different types and sources of evidence.[51] Before this is possible however, the organiser will need to provide them with evidence in the first instance.

5.3.2. How are the data collected?

Where the issue is S&T-related, evidence is largely derived from scientific, technical and political sources, and is acquired via the methods of data collection which are familiar to most social scientists. Interviews with key stakeholders (scientists for example), document analysis (of scientific or policy literature for example), narratives and oral histories (of those affected by, or directly at risk from, the issue(s) in question) and audio-visual data (news reports or documentaries for example) as well as surveys

[51] Of course, there are many issues which arise here, which are too numerous to address in this article, but which will be done so upon the completion of the full-scale Citizens' POLIS. It is foreseen that issues such as the effect of new, self-directed inquiry on the overall symmetry of the evidence base, the unequal distribution of research and 'net skills' between citizens, and the need for the recording and auditing of 'new' evidence (as found by the citizens) sources, will need to be addressed.

and appropriate statistics, can all be seen as possible data which can form the evidence base for the citizens' analyses and deliberations.

In FtF participation processes, evidence usually takes the form of expert 'testimony'. Experts are either interviewed in front of the citizens by an independent third party (or they might be cross-interviewed by two protagonists - analogous to the cross-examination of witnesses in a legal trial), or they are asked to give a straight presentation about their knowledge or experience. This evidence can be supplemented by various documents. It is necessary to pass reference here (before following it up fully in the next section) to the fact that the Citizens' POLIS must present its evidence online, in electronic format. The Citizens' POLIS, like the FtF processes, largely relies on interview and narrative data, with relevant documents being used to supplement these data. Ultimately, the methods for data collection are at the discretion of the social scientist and may depend on the specific issue at stake. In this respect, choices related to evidence production in the Citizens POLIS are comparable to choices which must be made in all social research projects. However, where the Citizens' POLIS (and citizen participation processes in general), differ(s) from more conventional social research, is that in the latter, the researcher's analysis of the data is usually the primary focus, whilst in the former, the citizens' analysis as social inquirers is the primary focus (Bohman, 1999). However, how raw data becomes 'relevant evidence' in the first place is a process in itself, and it is in this process the social scientist plays a central role.

5.3.3. How does the data become evidence?

As was alluded to earlier, there is a need to convert raw data into an initial body of relevant evidence via an editing process in order to enhance the efficiency, and indeed the feasibility of, participation. As has been argued, it could scarcely be assumed that citizens - particularly where their participation is voluntary (but even where they are paid a moderate honorarium) - would be prepared to read through hundreds of pages of documents or interview transcripts, listen to hours of audio files or watch hours of video footage. The problem of information-overload in public participation process has been noted previously (Horlick-Jones *et al,* 2007). Given that it is not possible to know everything, we must work instead with "what is reasonably knowable" (Webler, 1995). In the Citizens' POLIS, as in any piece of social research, it is likely that initial data

collection leaves the social scientist with a 'surplus' of data – which is sufficiently tangential to the specific issue under inquiry so as to be considered irrelevant to the purposes of that particular inquiry. Thus the social scientist organising a Citizens' POLIS, like any social scientist, must analyse their data, decide what is and what is not relevant to the purpose(s) of their particular project and 'prune' or edit their data accordingly. Lengthy narratives, interview transcripts, audio interviews, video interviews and documents must all be edited significantly so as to ensure that the work being asked of the *Ekklesia* is commensurate with the remuneration (or lack thereof) which they are receiving for their participation. In editing large amounts of data, the social scientist allows the citizens to firstly focus on a narrower set of data, which they can then analyse and discuss in more depth.

It is also possible to re-invoke the argument that the social scientist is best placed to organise the Citizens' POLIS in general, in order to suggest that s/he is better placed to specifically choose and edit data – i.e. to produce evidence – for the citizens, than is the stakeholder-sponsored researcher. As discussed in Chapter 4, it is important to remember that the social scientist also has objectives concerning their involvement in public participation processes as subjects of research (cf. Kerr *et al,* 2007). However, the social scientist's distanced status allows them to make a decision as to what all the views and positions are (in a comparatively impartial manner), so that the citizens can make an informed decision and not be influenced by a weighting of the evidence in favour of a particular position, as is more likely in exogenic participation processes (see for example, Irwin, 2006).

Despite their comparative neutrality, it is still important for the university social scientist to take additional steps to ensure that editorial bias is minimised as far as possible. The most straightforward way of doing so is for them to send the edited data back to its author (e.g. to the interviewee) so that they can read, hear or view it, and decide whether it is still satisfactorily representative of their viewpoint(s). This is commonly referred to as 'respondent (member) validation' (Bloor, 1978), something which is discussed in more detail in Chapter 7. Any comments can then be sent back to the social scientist in order for the edited version to be amended accordingly if necessary (by re-inserting or substituting data extracts for example). This process can

be repeated until both the social scientist and the interviewee/author are both satisfied with a final piece of evidence.

5.3.4. The Citizens' POLIS on MTRH

Evidence for the Citizens' POLIS on MTRH was drawn largely from interview data, but was supplemented with documents in text, image, audio and audio-visual form. Based on the background research completed during *Stage 1* (for a detailed discussion of the substantive issue, please see Chapter 6), the data was mapped according to four basic positions – that is their position on whether mobile telephones do pose a risk to health.

Data was organised according to the following stakeholder groups: *radiation scientists, radiation (public health) regulatory authorities, the mobile telecommunications industry* and *anti-mobile telephone activists.* The data were also allocated to one of four opinion categories: Category 1: *Mobile telephones definitely pose a risk to health;* Category 2: *Mobile telephones probably pose some risk to health;* Category 3: *Mobile telephones doubtfully pose some risk to health;* Category 4: *Mobile telephones are very unlikely to pose a risk to health.* The stakeholder groups and opinion categories are shown diagrammatically in *Figure 1.*

Framing a controversy as consisting of discrete yes/no answers can been seen to over-simplify and polarise a debate which might otherwise be seen to have a more nuanced series of overlapping and changeable responses (see also: Horlick-Jones *et al,* 160). However, it is also necessary to make some distinctions between viewpoints and to not ignore that many stakeholders did hold extreme views which were easily distinguishable from one another. Furthermore, the labels were supported by the stakeholders' own definitions of their roles in and views of the debate. That is, although activists were defined as such by the researcher prior to their involvement in this research, during the interview they explicitly defined themselves as being 'activists'. Furthermore, during the interview they explivitly (though not necessarily using the exact words) stated that 'mobile phones definitely pose a risk to health'. As such, these categories were generated somewhat deductively (based on based on background research) but were reaffirmed inductively through the analysis of the interview data. Reflecting the full complexity of all the various viewpoints in a scientific controversy – and the extent to

which they interlink and overlap is rarely an easy task – and certainly not one which could be done here. This can run the risk of falling into the potentially regressive trap of seeking to convey this complexity in ever-increasing detail and depth. As such, in the interests of pragmatism, some measure of selection and categorisation was necessary.

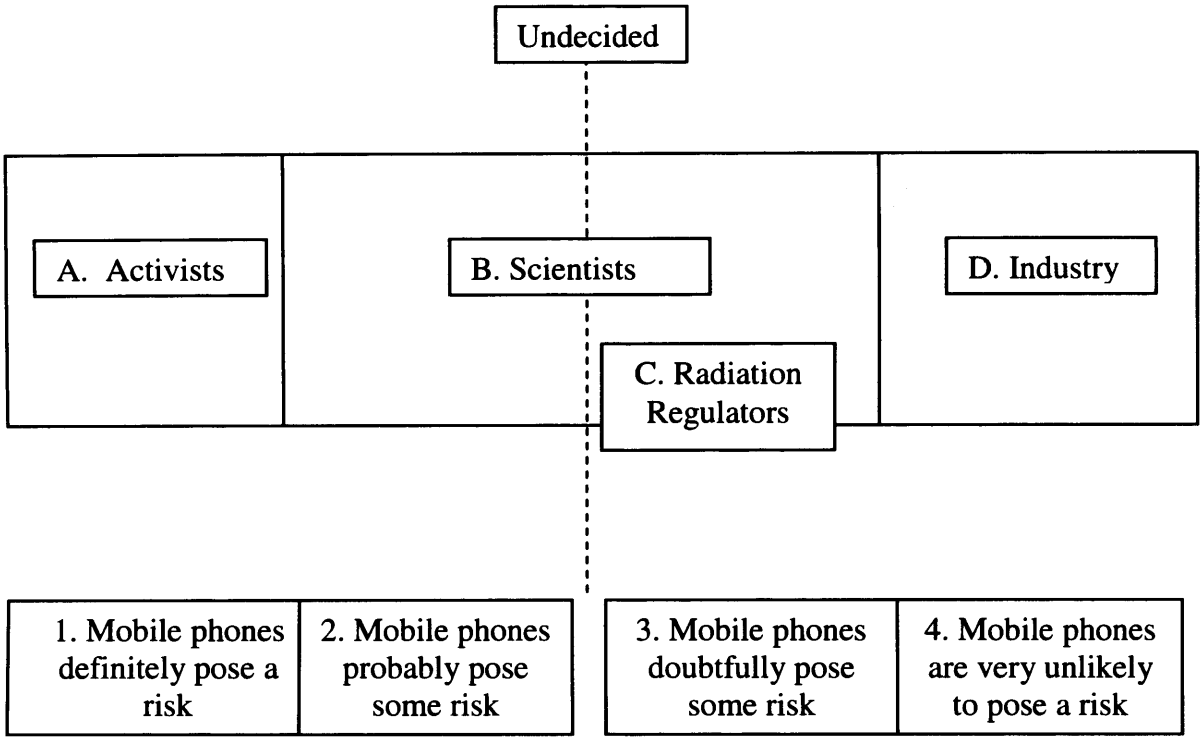

Figure 1: Diagrammatic representation of the four stakeholder groups and their corresponding opinions concerning the issue of mobile telephones, risk and health.

As *Figure 1* shows, the activists were best associated with category 1, whilst the mobile telecommunications industry were best associated with category 4. The radiation regulatory authorities were best associated with category 3, whilst the scientists as a group were split across categories 2 and 3. It was borne in mind however, that as the Citizens' POLIS progressed, these categories might become less distinct, and might interact and overlap with one another, serving to 'blur the boundaries' somewhat.

Following this stakeholder mapping exercise, the organiser's next task was to decide how much data to use. This involved deciding how many interviewees to use and how many documents to analyse. It was decided that two interviews from each stakeholder

group were to be conducted. Each interview lasted between 1-2 hours. Follow-up interviews with the stakeholder interviews were considered, but it was felt that this might provide too much data. It was felt that this 8 1-2 hour interviews, in addition to the substantial documentary data, would provide enough data from which to produce sufficient evidence. The tight timeframe of the first data collection stage was also a factor. Again the important point borne in mind was that too much evidence was possible and might serve to dissuade potential participants during the process) (as was found in the deliberative workshops of the GM Nation? Public Debate (Horlick-Jones et al, 2007: 83; see also Rowe and Frewer, 2000). In the scientist category however, more interviews were used. This decision was made due to the fact that in this category, unlike the others, opinion is internally polarised. As such, the organiser used four scientists: two who argue that it was probable that there are adverse health effects associated with mobile telephones (category 2), and two that argue that it is doubtful that this is the case (category 3).

Fuller clarification of the various stakeholder views can be found in Chapter 6. However, to summarise, it was found that, on both 'sides' of the debate, scientists were generally seen to display more moderate views than the other stakeholders. That is, those scientists whose basic view was that mobile telephones *did* pose a risk were more tentative in the language they used, and more modest in the severity of their claims, *vis-a-vis* the anti-mobile telephone activists. So, whereas activists were unequivocal in their view - which they felt was supported by irrefutable evidence - mobile telephones posed a considerable risk, those scientists who were on their 'side' were generally more tentative in claiming that the evidence suggests that risks (across a ranging scale) are probable or even evident (though not necessarily irrefutable). Similarly, those scientists whose basic view was that mobile telephones *did not* pose a risk were more tentative in the language they used to make their claims. Whereas the claims made by the mobile telecommunications industry and to a lesser extent the radiation regulatory authorities, were more confident and less ambiguous about the future. So, whereas the regulatory authorities generally asserted that there was no evident risk, and generally did not discuss risk in terms of possible future effects, scientists on this 'side' of the debate more cautiously suggested that on their assessment of evidence there was little cause for concern although future research might show that some risks do exist.

Of course it is important to bring in here the notion of validity, and whether or not some types of evidence can or should be deemed more or less valid. Athough the bulk of the data presented to the citizens was derived in the first instance from interview data, this data itself was derived from different types of evidence. For instance, whereas scientists are conventionally used to drawing their arguments from peer-reviewed research, activists might draw their arguments from a range of sources, possibly but certainly not necessarily, including peer-reviewed academic journals. Although the natural sciences are universally tied to the idea that evidence can be hierarchised in terms of its validity and efficacy, this is not something that is universally acknowledged in the social sciences.[52] It is important to point out however that the organiser of mesogenic participation processes should not be concerned with an assessment of the validity of different types of evidence. Their aim, as was noted in Chapter 4.6.1., is to present different positions of different stakeholders as neutrally as possible. Here they can take their lead from Bloor's (1978) 'Strong Programme' and its principle of methodological symmetry, in which all sides of a scientific controversy as treated as impartially as possible. This however is not to say that all positions and interpretations are to be considered equally valid. Mesogenic participation processes like the Citizens' POLIS are based on pragmatism rather than constructivism. As discussed in Chapters 2 and 3, pragmatic inquiry is democratic inquiry, and the Citizens' POLIS is an institutional space for democratic inquiry. It is the citizens' and not the organiser's assessments on the validity of various sources of evidence that are salient. As will be discussed in the results chapters of this thesis (see in particular Chapter 8.3.) the citizens were clear as to which types of evidence they felt were more valid than others.

The organiser contacted potential interviewees via email (see Appendix A). The organiser conducted a total of ten interviews.[53] In line with the usual ethical conventions, the final interviewees were provided with a detailed information sheet and were asked to sign a consent form (see Appendix B for more details). A larger-than needed 'pool' of potential interviewees was identified in Stage 1 (this was necessary

[52] The 'pyramid of evidence' is well established, particularly within the biomedical and clinical sciences. It posits the randomised Some of the more broader schemas posit the double-blind randomised control trial at the top and have 'opinion,, ideas and anecdotal evidence' at the bottom.

[53] However, in a couple of instances interviewees asked if they could bring a colleague with themto the interview. The researcher felt that this was acceptable since there were still only 2 interviews from each category (except for the scientists) which meant that the symmetry was not affected. The total number of interviewees was technically 12 therefore.

because of the inevitability that some would decline the invitation). All these interviewees were contacted, and final interviewees were chosen according to a quota system and within that on a first-come-first-served basis. The idea was that once two experts from each stakeholder category had been interviewed, those from within that category who had not responded to the initial request were contacted in order to inform them that they were no longer required. On this occasion, the organiser did not have to 'turn away' many potential interviewees, since those that accepted quickly filled the quotas, with the vast majority of the other potential interviewees not being interviewed because they declined the initial request for an interview.

Interviews were conducted either face-to-face, via the telephone, or electronically via asynchronous online communication. Ideally, the researcher would have liked to have conducted and digitally recorded audio-visual interviews with each of the participants. Although this is in theory possible for future Citizens' POLISs, it decided against in this particular instance for two main reasons. Firstly, it is usual in social science research to preserve the anonymity of the research participants unless they request otherwise. [54] Furthermore, as the BSA Code of Ethics points out, sociological research using the internet should err on the side of caution as far as anonymity and confidentiality is concerned.[55] As a result it was decided that the researcher would preserve the participants' anonymity as far as possible, and would protect their identity through using text-only CMC.[56]

One limitation of this choice is that the expertise of those being interviewed was decontextualised. One can of course make the argument that taking any expert out of their local environment for the purposes of an interview serves to decontextualise that expertise. Wynne (1996:70) argues that the difference between lay knowledges and

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[54] See: http://www.britsoc.co.uk/equality/Statement+Ethical+Practice.htm#_anon (Guidelines 34-41)

[55] According to BSA Code of Ethics guideline 41, 'Members should take special care when carrying out research via the Internet. Ethical standards for internet research are not well developed as yet. Eliciting informed consent, negotiating access agreements, assessing the boundaries between the public and the private, and ensuring the security of data transmissions are all problematic in Internet research. Members who carry out research online should ensure that they are familiar with ongoing debates on the ethics of Internet research, and might wish to consider erring on the side of caution in making judgements affecting the well-being of online research participants' (http://www.britsoc.co.uk/equality/Statement+Ethical+Practice.htm#_anon).

[56] It is worth noting that the researcher did ask the participants hypothetically whether they would be amenable to being recorded audio-visually. The response was split. Interestingly, those who were classed (and who classed themselves) in category 1 (mobile phones do definitely pose a risk to health) (see Chapter 5.3.4.) were more inclined to agree to being recorded than those from other categories.

scientific knowledge is that the latter is decontextualised in comparison to the former. However, as STS has shown, the scientist's expertise also takes place within a specific context, namely the laboratory, and taking that expertise out of its environment also serves to decontextualise it (although the point Wynne (1996) makes is that the latter lays claim to universality). Of course, we might see this to relate to older, broader debates over whether research interviews lack ecological validity (Cicourel, 1982; Cole, 1996). In terms of ecological validity, taking the scientist out of the laboratory to interview them about their knowledge and experience is the same as taking Wynne's (1985; 1996) sheep farmer out of Cumbria to interview them about their knowledge or experience. The important point to be made in regard to this thesis is that in using text-only rather than AV interviews, the various expertises of the interviewees was further decontextualised by the time it reached the citizens. Although, as noted above, future Citizens' POLISs would make use of AV interviews, the fact that they did not in this instance was not seen as a major limitation for two main reasons. Firstly, other forms of AV evidence, which were already publicly-available, were shown to the citizens (e.g. *YouTube* videos). This will be discussed in more detail below. Secondly, in line with earlier discussion (see Chapter 3.3.), preserving the interviewees' anonymity could also be considered advantage (the disadvantages have also been discussed in Chapter 3.3.). That is, because text-only CMC attenuates social status cues, citizens were less likely to be able to make snap judgments based on biographical characteristics such as gender and race, and for example on the sound of a stakeholder's voice or their physical appearance (and biographical characteristics such as gender and race etc).

Documentary data was collected through a variety of media, including: (.pdf) downloads; (.jpeg) digital images; (.mp3) audio files; and digital video clips. This multimedia data is to be taken from a wide variety of sources, including: stakeholder websites; e-newsletters; stakeholder DVDs; podcasts; and video-sharing websites. These sources of data were publicly available, not copyrighted, and could therefore be used by the researcher for the purposes of his research. The total evidence consisted of the following: edited versions of ten stakeholder interviews (which were conducted then transcribed by the organiser), 4 written stakeholder documents (which were available already in electronic format) 6 images, four AV clips and 2 audio interviews (which were accessed but not conducted by the organiser). As with the interviews, the researcher aimed to make the selection of documentary data as symmetrical as possible.

That is, he ensured as far as possible, that the documentary evidence did not all support a similar viewpoint. The internet has been identified as a source of 'data riches' for social scientists (Williams, 2009). As such, it was assumed that there would be a wealth of potential evidence on this issue of MTRH which the researcher could use for the Citizens' POLIS. As discussed above however, there is a need to ensure that the evidence which the citizens are initially faced with is not too overwhelming, since this might act as a disincentive to participation. As such the social scientist was forced to narrow what could otherwise prove to be an impossible task of systematically exploring all possible data sources on the internet on the issue of MTRH. The researcher decided to make use of two sites of potential evidence - i.e. databases. To search for relevant audio files ('podcasts'), the researcher used a large and well-known software-based online digital media store, whilst to search for relevant audio-visual data ('clips'), the researcher used a large and well-known video-sharing website.

The researcher decided to begin with a keyword search using *mobile telephones* AND *health.* It was decided beforehand that, depending on how many results this produced, he would perform additional keyword searches – either to narrow down the results or to extend them. In the audio file (podcast) search, 53 results were produced using *mobile telephones AND health.* In the video clip search, 713 video clips were produced using *mobile telephones AND health.* The researcher worked his way through the files and clips and organised them according to which stakeholder category they best belonged and according to what their general view of MTRH was (see Chapter 5.3.4.). Most of the audio files and video clips were relatively easy to allocate, because the authors' names, position and relationship to the MTRH debate was usually provided.

It is also important to discuss the role of the social scientist in editing the data for the citizens. The interview transcripts were edited through a thematic, grounded theory approach to analysis (see Chapter 5.6.2.). *NVivo* was used to facilitate the analysis. That information which was through the coding process, deemed irrelevant was omitted and that information which was deemed to be relevant was included (but as concisely as possible). Following the coding process, the edited versions of the interview transcripts were sent back to the interviewees via email, for them to be checked. A discussion of the role of respondent validation in this research is given in Chapter 5.6.1.). In three instances, interviewees suggested relatively minor revisions to the edited versions.

These revisions were then made by the social scientist and re-checked by the interviewees, after which both were satisfied with the final piece of evidence.

5.4. Stage 4: Presenting the evidence

5.4.1. Why use hypermedia?

One of the advantages of the Citizens' POLIS is that the evidence can be presented via the use of hypermedia. The term hypermedia is used to describe a computer-mediated system which contains information joined by authored "links" that create non-linear associations between different media, such as text, image, video and audio (Dicks *et al,* 2005). The benefits of using hypermedia in social science research have long been recognised. As Dicks and Mason (1998 85; see also: Dicks *et al,* 2005) suggest: [H]ypermedia, potentially enables both the complexity of the object of study and the mode of its representation to be more fully and flexibly articulated'. In face-to-face processes, evidence is usually produced linearly – that is, all the citizens are shown 'evidence a, b, c, etc.' in a given order. In the Citizens' POLIS however, as will be discussed in the following section, participants are able to access and re-access information in any order and at any time. The significance of this is that it reduces the extent to which the evidence is pre-framed, at least in terms of how it is ordered. So, whereas a pre-framed order might (unintentionally) imply to a participant 'this first piece of evidence in the sequence is the most important and this last piece of evidence in the sequence is least important', hypermedia allows the citizens to 'make their own way' through the evidence and create their own sequence.

5.4.2. The Citizens' POLIS on MTRH

The first step in presenting the evidence was to construct the Citizens' POLIS website. The researcher registered (for free) with a specialist web hosting company, through which he was given web space and a domain name (http://www.cpolis.co.uk; see *Figure 2*). Through the freeware (free software) offered by the web host, which contained a built-in web-editor/web-designer programme, the researcher was able to design, create and publish his website. Facilities to enable user interaction were embedded into the

website. This was used to facilitate the deliberation, and these will be discussed in the following section (Stage 5). The web host also allowed the researcher to present the evidence through the use of HTML (Hypertext Mark-up Language). This is basically the specialist formatting code through which links within and between information is created. As well as being able to add 'raw' HTML (basically, using HTML acquired from, e.g. a HTML code book) the social scientist was also able to make use of a built-in hyperlink function, which allowed him to conveniently create (hyper)links to: other pages on his website; pages of other websites; documents he had uploaded to a 'document gallery'; images uploaded to an 'image gallery' (these could of course have been done, albeit less conveniently, using the raw HMTL function). In regard to the two latter features, the web host allowed the researcher to upload a number of documents (i.e. electronic files) including written documents, audio files, audio-visual files and pictures, all of which the social scientist had uploaded or downloaded onto his computer.

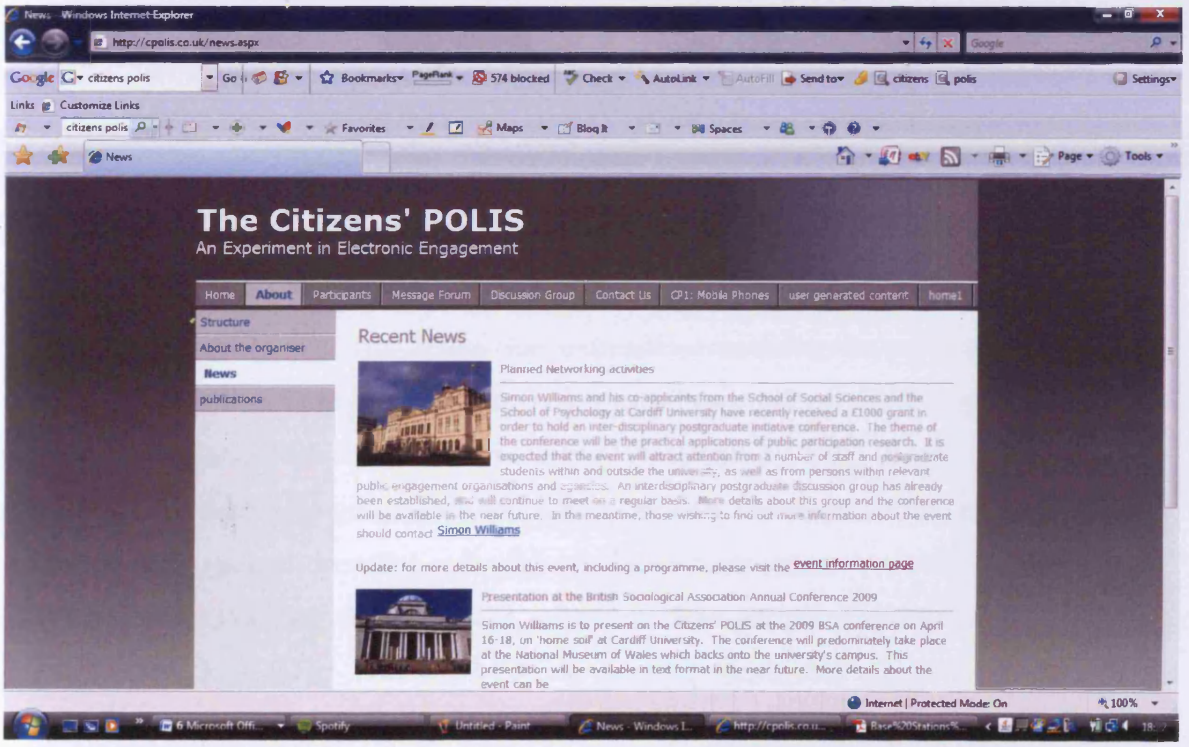

Figure 2: Screenshot of the Citizens' POLIS website (http://www.cpolis.co.uk)

It is perhaps worth noting here, that whilst the mechanics of web design and the World Wide Web in general, are of course complex and sophisticated, much of what is

intricate and esoteric is 'behind the scenes' (i.e. tasks already 'programmed in') so-to-speak, and the 'surface' operations (i.e. tasks performed by website's author) are far more straightforward and less esoteric. The result was a designated website within which, and to which, all the evidence produced in stage 3, was (hyper-)linked. Although this is best understood through the website itself (see http://www.cpolis.co.uk and *Figure 3*), it is possible to attempt to describe the structure of the website. The final Citizens' POLIS website had seven top-level ('parent') webpages and another 6 second-level pages. The seven top-level pages were: *Message Board, Discussion Group* (see stage 5 below), *Home, About, Contact Us* and *Citizens' POLIS on Mobile Telephones, Risk and Health.* The *Home*, *About* and *Contact Us* pages feature in most (organisational) websites and their purpose was to provide information about the Citizens' POLIS as an electronic participation process, both to the participants themselves, and to a wider audience (e.g. to stakeholders and to individuals from non-participating publics). Evidence was presented through the 'Mobile Telephones, Risk and Health' section.

The 'Mobile Telephones, Risk and Health' section consisted of one top-level webpage and 5 second-level pages. The top-level page served as an introduction and orientation page. Linked to it were the website's Homepage, a participants' instruction page (from the *About* section of the website), the Contact page (in case participants needed to directly and confidentially contact the researcher), both the message board and discussion group, as well as to the five sub-pages on each of the five sub-issues concerning MTRH. As discussed above, it is possible for hypermedia to contain author-dictated pathways (also referred to as 'trails') yet also retain the capacity for its users to explore the information in a non-linear fashion (according to a path they themselves determine as they make their way through the different media, via the various hyperlinks). Ultimately the information (i.e. the evidence) was arranged according to the five sub-issues (see Stage 2 above and Chapter 6.1). *Figure 3* shows a sample evidence page for the sub-issue of 'The Precautionary Principle'.

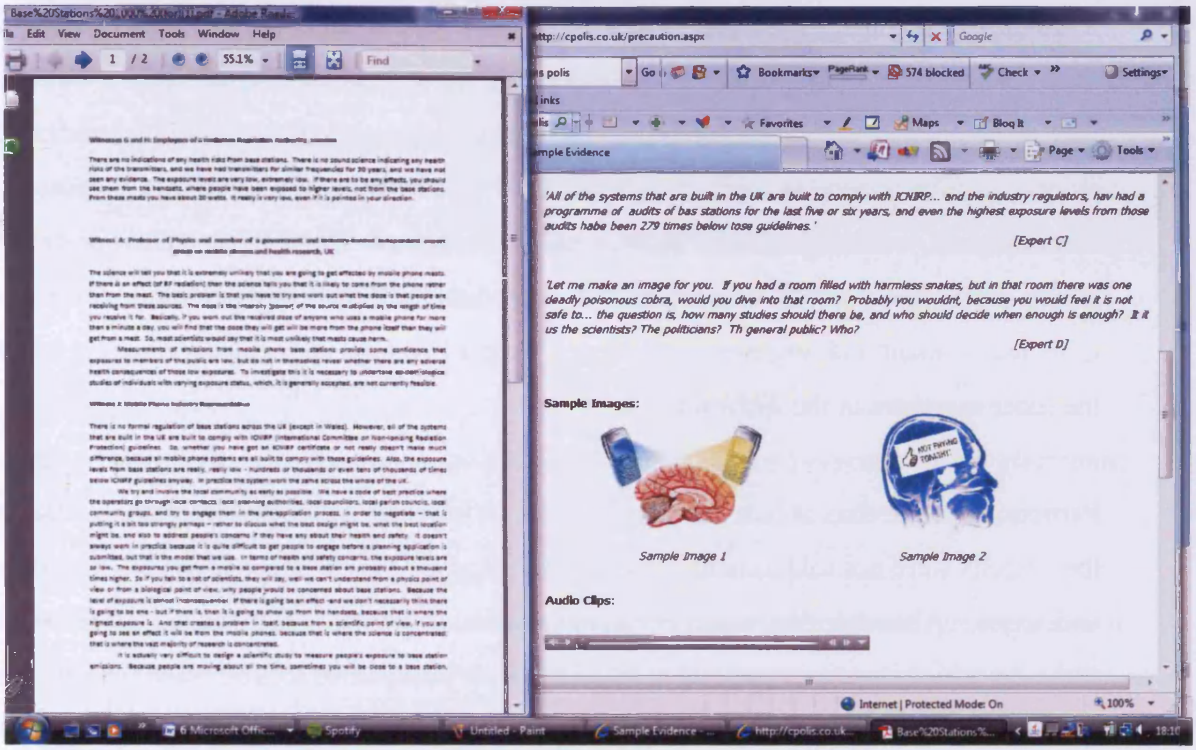

Figure 3: Sample evidence page showing multi-media evidence articles on the issue of 'The Precautionary Principle'. Included in this screenshot are sample interview data (the pdf document to the left of the screen) and also sample document and interview extracts, sample images and a sample audio file (in the main webpage).

The introductory page for the Citizens' POLIS on MTRH included a menu bar on the right of the page through which the five webpages containing the evidence could be accessed. There was nothing to explicitly direct the user to a particular page, or which instructed them to follow the links to these pages in a certain order. However, by virtue of the fact they were arranged vertically, it was assumed that people might automatically follow them in an order from top-to-bottom (since it is assumed that this is the 'obvious', but not the necessary, way that most people would work their way through a vertical list).

It is important to note that because hypermedia was used, the participants were not confined to a linear engagement with the evidence - unlike in FtF participation processes (see Chapter 5.4.1.). The five substantive areas each had their own designated web page, each of which contained hyperlinks to evidence documents in text, audio, image and video format. There were multiple links between these pages to

increase the non-linearity. The citizens were able to access the information whenever they wished and as many times as they needed. Usually, in a citizens' jury (and other face-to-face participation procedures), citizens only get one opportunity to hear or see evidence. This means that some information could be missed simply due to a lack of concentration, or the failure to hear or see a certain piece of information, at certain points during the process. The citizens in were asked to visit the website in their own time, and consult and analyse the evidence with a view to later deliberating on it with the other members of the *Ekklesia*.

Participants were thus able to access all of the evidence, in any given order. Therefore the citizens were not told to read *Evidence A* first, *Evidence B* second, *Evidence C* third, and so on. Although the researcher cannot account for the exact ways in which, and paths by which, each citizen engaged with the evidence, the deliberations themselves revealed a degree of non-linearity.[57] On a number of occasions a participant referred to a piece of evidence which was not directly related to the particular sub-issue being discussed. An example of this would be a participant referring to a piece of evidence during the deliberation session on base stations which was essentially focussed on the sub-issue of cancer. Of course, within the deliberation such references were not discouraged by the researcher.[58] It might be useful to refer to a particular sub-issue in order to highlight how the participants could have engaged with the evidence in practice. Taking the example of the deliberation on mobile telephones and cancer for example, the researcher had provided the participants with edited versions of six interview transcripts, along with a sample from an audio interview and a short audio-visual clip (the latter two had been obtained from public access websites, and featured interviews with relevant stakeholders).

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[57] Retrospectively, it would have been interesting and useful had the researcher asked the participants to make a note of the order in which they accessed the specific pieces of evidence and how many times they accessed each piece. This might have revealed interesting patterns or contrasts in the various ways in which the citizens' accessed the evidence. It might also have sought to corroborate findings from the deliberation itself on which pieces of evidence were deemed most significant – i.e. through seeing whether those pieces of evidence which were most heavily cited in the deliberation itself were also those pieces of evidence which were most viewed on the website.

[58] This is an example of a participant eschewing the suggested chronological pathway of the researcher, and navigating their own way through the website. The researcher did not follow up with the participants why they deviated from these suggested pathways when exploring the evidence, since this would be a significant task and one which the researcher felt was interesting but beyond the scope of the thesis. It is suggested however, that in future research on electronic public participation, the varying navigation paths taken by participants (assuming of course that they take different paths through the evidence) is something which might make for interesting findings and which might be seen to shed light on the nature and content of subsequent deliberation.

After an initial review of the project and a preliminary discussion, the citizens, guided by the organiser, decided on discussing the issues in the following order: 1. Base Stations; 2. Cancer; 3. Biological Mechanisms; 4. Electrohypersensitivity; 5. The Precautionary Principle. This meant that the participants contributed to the decision on how to sequence the deliberation sessions.

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5.4.3. A brief note on the future possibilities for evidence presentation in electronic public participation processes

Whilst the Citizens' POLIS must rely on remote means of evidence presentation, it should be noted that it would not be impossible for some evidence – namely audio-visual interviews or narratives - to be conducted online in real-time. The use of videoconferencing groupware for example, could allow citizens to see and hear the experts present or be interviewed live. This would allow the citizens to also take into account their responses to live, on-the-spot questioning. Whilst some might suggest that videoconferencing would be the best means of conducting an online participation experiment, because it is more resonant still of face-to-face interaction, this may not be the case for a number of reasons. Firstly, from a practical point of view, this would be more difficult to organise and use and would be more expensive to implement.[59] Secondly, it would require the experts to consent to being identified by the citizens.[60] Thirdly (as discussed above), there are some advantages to be had from being able to combine as many media as possible in a hypermedia environment and to not rely on more simple, linear multimedia presentation.[61] Finally, it was felt that the anonymity conferred by non-videoconference electronic message-based interaction can be seen to have a positive effect on deliberation, in that it can encourage deliberants to be more open, vocal and candid than they might otherwise have been (see also Chapter 3.3).

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[59] Live presentation, unlike a prior interview with the social scientist, would require the citizens *and* the experts to be available at certain times, instead of only requiring the citizens' assembly to convene at certain times. It is even more unrealistic where compensation for loss of earnings or honoraria either cannot be offered, or can only be offered in moderation.

[60] More often than not in social science research guaranteeing participants anonymity is an imperative ethical requirement, and is frequently key to securing participants' consent.

[61] Of course, we can still link or embed *pre-recorded* AV interviews/presentations to a hypermedia system – and this can allow for non-verbal forms of communication (e.g. expression, body language) to be taken into account. It should however be considered *one* amongst a number of ways of presenting evidence.

5.5. Stage 5: Hosting the deliberation

5.5.1. What does it mean to 'host' a deliberation?

The general role of the social scientist in the organisation of a public participation process has been discussed elsewhere (see Chapter 4 of this thesis and Williams, 2010). However, given that deliberation is the culmination and ultimate focus of a participation process, it is worth elaborating on this role with specific regard to their 'hosting' of the deliberation. The choice of the term 'hosting' is a deliberate one. A 'host' can be defined as: 'one that furnishes facilities and resources for a function or event' (Merriam-Webster, 2009). It is this definition which most accurately captures the role of the researcher in the deliberation in the Citizens' POLIS. The social scientist does not dictate, direct or conduct the deliberation. Nor do they participate in it as such. Their primary function is to provide the *facilities and resources* for deliberation. However, in the Citizens' POLIS on MTRH – although this does not necessarily need to be the case – the researcher also played the role of moderator. As such, in setting up the discussion room, and inviting the citizens to use it, and in possibly moderating the discussion, the social scientist has fulfilled his or her primary responsibility as host. The citizens' deliberation should be as constrained as little as possible, with the moderator intervening only so as to facilitate lagging conversation and, in line with Dewey's (in Boydston, 1990: 222) assertion that 'guidance can be an aid to freedom, not a restriction upon it', in order to re-focus conversation that has departed too far from the issue being inquired into (see Chapter 5.2.2. for a discussion of the need for deliberation to be (semi-)structured). As Foucault (1967; 1970), amongst others, has shown, all forms of talk are power-laden. In the general sense, deliberation, as a type of talk, is no different. Some have applied this poststructuralist analysis to deliberative democratic theory, to argue that deliberation can itself simply reproduce the power

What distinguishes deliberation in mesogenic participation is that it takes place within a structured and orchestrated environment that actively seeks to distribute power *more* evenly than in naturally-occurring forms of political talk (Knight and Johnson, 1997; see also Chapter . Deliberation is structured so as to remove hierarchy rather than to create it from the start. Deliberative democratic institutions do not assign roles in accordance with a hierarchy. Unlike professionalised, large-scale campaign groups and

new social movement organisations, its institutions do not have a Chairperson, a Board of Directors or a Board of Trustees.[62] Rather, in deliberative democratic institutions, participants are, in the first instance, only accountable to the group of participating citizens (as a whole), and beyond that to the wider citizenry (or citizenries) that they are, or might be, aiming to represent.

Nevertheless, as discussed in Chapter 3, there are inevitable inequalities between different individuals in an online environment (as well as in offline environments of course) in terms to their deliberative capacities. As such, the researcher as 'guidance counsellor' can seek to elicit contributions from certain individuals in instances where it appears as though their voice is getting 'lost in the crowd' so to speak. As discussed previously, whilst electronic communication opens up certain inequalities related to the use of technology (e.g. to typing speed and competency), it also attenuates certain inequalities associated with traditional FtF communication. Of course an obvious way of ensuring equality in terms of the participants' actual contributions to the deliberation is to impose 'equality' from outside – that is, to establish in advance a system whereby everyone has a certain number of turns, which are taken in a certain order. This can however be considered undesirable, since it is a constraint on deliberation, and one which creates a superficial equality. Instead, ensuring - as far as is possible - that a participation process facilitates its own equality within deliberation is desirable.

Moderating a deliberation which is anonymous might go some way towards fostering greater equality amongst participants. In addition to this, it might also be useful (and even necessary) for the social scientist to take a more active guidance role, in which s/he seeks to elicit contributions from those who are yet to contribute significantly to that deliberation. One might ask themselves however, whether this conflicts somewhat with the idea of deliberative liberty. The notion of liberty is more often than not discussed in terms of the equality or symmetry of speech-acts (Benhabib, 1996; Bohman, 2004; see Chapter 3.2.). However, one might argue that having the 'freedom to not speak' is just as important as having the 'freedom of speech'. In response to this, one could of

[62] Most established campaign and activist groups are structured in some way. Greenpeace, as the exemplar campaign/activist groups, has a well established Board of Directors. In the field of MTRH, the voluntary association the *Radiation Research Trust* similarly has a working Board of Trustees, who are part of the group but who are also responsible for organising and structuring meetings, conference and general discussions internally.

course question whether any model of *deliberative* democracy can thrive in situations where all, or even some, participants are not contributing significantly to the deliberation – either through their own choosing or through being forced by other participants. Based on this it is desirable to explore means of deliberation which, as far as possible, foster equal and free deliberation with minimal intervention. Where necessary however, the intervention of the social scientist as a facilitator or guide to deliberation should not be precluded.

5.5.2. Structuring the deliberation

In the Citizens' POLIS, deliberation takes two forms: asynchronous deliberation and synchronous deliberation. Asynchronous interaction takes place via a 'discussion forum'. This is where users 'post' messages at a given point in time, which can then be received by other users at a future point in time (depending on when they next visit that forum). These can be readily obtained from the internet, either at a small cost or free of charge, and can be linked to, or 'embedded' into, the host website. Synchronous interaction takes place when two or more users can exchange messages as a collective, in real-time, as they type their corresponding messages into their computers. So, one user can type and send a message, which is immediately received by other users, who can then, should they chose to, send an immediate response. One way to operationalise this in the Citizens' POLIS is for the researcher to make use of existing Instant Messaging (IM) clients which are popular (particularly amongst younger individuals), free to download and very straightforward to use. Another, way to achieve synchronous interaction is via the use of a designated 'chat room', which again can be obtained freely or cheaply from the internet, and which can be linked to, or embedded into, the host website.[63]

Whilst it is possible to conduct the deliberation solely using a discussion forum - indeed the majority of online deliberative fora are asynchronous (Wright 2006) - there would be some drawbacks in doing so. There is a growing body of research on the use of online focus groups in social research which compares the relative advantages and disadvantages of synchronous and asynchronous versions of this method (Murray 1997;

[63] It should be noted also, that most discussion forums and chat rooms include a security option, which can allow the creator (i.e. the researcher) to control who can(not) access them.

Mann and Stewart 2000; Rezabek 2000; Franklin and Lowry 2001; Seymour 2001; Stewart and Williams 2005; see also, Chapter 3.3.)

5.5.3. Synchronous communication

Synchronous interaction allows us to reproduce the heightened sense of immediacy and group dynamics of face-to-face interaction (Stewart and Williams, 2005: 405). This is desirable if we are to see openness and cooperation as being key characteristics of deliberation (Bohman 1999; see also, Chapter 3.2.3.). The immediacy of synchronous interaction can facilitate a more "shared" (i.e. cooperative) electronic environment than can asynchronous interaction, and the former arguably encourages participants to be less individualist, more reactive and more candid than in the latter. Also, some chatrooms and IM clients often include in them a feature which tells the other users that a given user is sending a message. In this way, synchronous online communication can resemble the "turn-taking" characteristic of face-to-face interaction. In such a way, it is possible for group discussion to proceed in an immediate yet orderly fashion. Making use of this turn-taking feature allows for synchronous online discussion which is more resonant still of FtF communication. In FtF communication, we often know when another person wishes to speak (even if we chose not to listen to them and to speak over them). A person, through body language, hand or facial gestures can indicate that they wish to make a contribution to the discussion. In (non-AV) electronic communication however (as discussed in Chapter 3.3.), such non-linguistic cues are often removed entirely. Also, in FtF communication, and particularly in intense and controversial debates where participants are especially at pains to put across their views, they will have to offer one or two words to forge an 'opening' into that debate. That is, when more than one person wishes to speak simultaneously, whoever 'gets in first' is often given the opportunity to finish their contribution first before allowing the other(s) to make their contribution. However, as noted in Chapter 3.3., the problem is that those who more frequently and successfully forge their way into a discussion are usually those who are more confident and dominant in terms of personality. The danger with allowing for participants within a discussion to establish their own system of turn-taking is that it is not necessarily egalitarian, and dominant personalities are therefore given (by more submissive personalities) - or take for themselves - more turns.

Fundamentally, we might see there to be a need for a trade-off between freedom and order. Those forms of synchronous CMC which do have a feature indicating who is currently typing a message, allow for more ordered deliberation, which as suggested above, is most resonant of FtF communication. Although electronic participation processes should seek to retain as many of those features of FtF participation that are considered useful., it should not be forgotten that the use of electronic media can serve to improve the legitimacy and effectiveness of participation (see also Chapter 3.3. and 9.5). As such, it is not necessarily a bad thing if electronic participation processes are not able to reproduce all the features of FtF participation processes. Allowing for communication which lacks cues signalling when a person is in the process of typing a message might not necessarily be seen as a bad thing. Certainly in terms of freedom of expression, not knowing when another person wishes to speak can allow for less dominance and deference within a deliberation. That is, if a person does not know that another person is about to speak then they will not be able to defer to them (if they are submissive) or speak over them (if they are dominant). Of course, the drawback to this is that communication is prone to being disjointed, with people speaking simultaneously (see the argument on 'deliberative fluency' in Chapter 9.5.). If we are to see all forms of communication as being necessarily ordered, then we are to see a need for software to include features which allow for more ordering to be built-into the deliberation (an example being the turn-taking feature previously discussed). If however, we are to truly treat CMC as a unique form of deliberation *per se,* and if we are to fully explore its potential as a liberating form of deliberation, then allowing for communication which is less ordered might be desirable. In the latter, the absence of a turn-taking feature means that, those who wish to speak more often than the others cannot inform the others in advance of their contributions, and as such, all those involved have greater freedom to simply speak when they want and as much as they want. Of course, whether ordered or disordered synchronous communication works in the context of public participation, is something which needs further empirical investigation.

In the Citizens' POLIS then, the bulk of deliberation takes place synchronously. The length and structure of the synchronous interaction will depend largely on the scope of

the agenda and the breadth of the issue(s) in question.[64] For instance, a very broad issue, like the ethics of genetic modification would arguably warrant more time for deliberation than a narrower issue, like those related to local town or city planning. The former for instance, might only require a one-off, hour-long deliberation session, whilst the latter might require a series of related but separate hour-long deliberation sessions, each of which focuses on a particular sub-issue.[65]

5.5.4. Asynchronous communication

Asynchronous CMC also has a place in the Citizens' POLIS primarily as a means to put into practice the reflexive imperative. Having a discussion board in the Citizens' POLIS serves three functions. Firstly, it can be used to facilitate interaction between the citizens themselves and between the citizens and the researcher. Secondly, it allows them to make additional, unscheduled contributions to the substantive deliberation itself, which they were unable (for whatever reason) to make in the synchronous deliberation sessions. Thirdly, a discussion board can be used to facilitate interaction between the citizens and those stakeholders participating (i.e. those providing evidence).

A discussion board can allow citizens to post messages which relate to the organisation of the process itself. That is, citizens are able to make suggestions as to whether changes should be made to the agenda, the evidence or the structure of the synchronous deliberation itself. If for example, once the process is underway the citizens believe that a new focus is in order, then they might make suggestions as to how the agenda should be modified. Similarly, if in-between synchronous deliberations they come across some new evidence (through their own additional inquiries) that they feel would be to the benefit of the other participants (and the social scientist), then they can use the discussion board to give them instruction on how they can access that information also (e.g. a link or reference). Additionally, the discussion board can also be used for more 'administrative' queries and comments. It provides a space for questions to be asked

[64] It should be noted however - from a practical point of view - that facilitating multi-national deliberations where citizens are participating across different time zones, may not be a straightforward task. In such cases, the need for asynchronous communication may take on more significance.

[65] Each synchronous deliberation session would need to be scheduled so that each participant could be available and online at the same time.

and responses to be received, concerning issues such as what the times and dates are for upcoming synchronous deliberation sessions.

Comments made on the discussion board can also relate directly to the substantive issue *per se.* In this respect, a discussion board can act not only as an administrative tool to aid and structure the synchronous deliberation, but can also be seen as being a means through which substantive deliberation itself takes place. As noted above, asynchronous CMC is more 'considered' (Stewart and Williams, 2005) than synchronous communication, and as such it can act as a good counterpoint and supplement to the latter. Using a combination of synchronous and asynchronous interaction allows deliberation in the Citizens' POLIS to be both instinctive and measured. An asynchronous discussion board also allows for a 'bridging' between synchronous deliberation sessions, something which is particularly important in cases where scheduling means that there are large gaps between sessions. In encouraging participants to use a discussion board, the social scientist can prevent their enthusiasm from waning. It can be used also for briefing and de-briefing, and to summarise arguments and decisions made in one synchronous deliberation session, and to offer a space for points to be raised in regard to upcoming synchronous sessions (as discussed above).

Finally, an asynchronous discussion board can allow the citizens to post questions which could then be answered by the participating stakeholders. The role of stakeholder Q&A in the Citizens' POLIS has yet to be discussed in length, and it is on this feature which the next section focuses its attention.

5.5.5 The role of citizen-directed questions

The Citizens' POLIS follows the citizens' jury model in allowing room within participation for citizens to interact with those stakeholders which have provided them with evidence. In the citizens' jury, it is usually the case that, after stakeholders have presented their 'testimony', they will then be 'examined' by the jury members (should the jury members so wish of course). Though the legal terminology is often involved, this is the main way in which the citizens' jury as a public participation process deviates from the legal jury to which it otherwise frequently compares itself. In a legal trial of

course, jurors are not given the opportunity to directly question the witnesses themselves. Rather, advocates do this on behalf of the two parties and it is simply the jurors' job to interpret and evaluate the questions posed and the answers given, in a more passive capacity. In the citizens' jury however, questions can be asked directly, either during, or most likely after, a presentation. This way, evaluation of the evidence can be direct and interactive. This in turn can be seen to fulfil the reflexive imperative which is a feature of the Citizens' POLIS and which, it has been argued, should be a feature of all participation processes. Incorporating citizen-directed questioning into an electronic participation process also needs to take into account the new media across which participation is taking place.

Theoretically, fostering interaction between citizens and stakeholders should be more straightforward in an electronic participation process than in an FtF participation process. The reasons as to why it should be easier for stakeholders to participate are the same reasons as to why it is easier for citizens to participate – namely, that electronic communication is more accessible and convenient (economically and in terms of time and space, as discussed in Chapter 3.3). However, as with citizen participation, stakeholder participation also needs to take into consideration factors related to technology use, such as whether or not a potential stakeholder participant is comfortable and even able to take part electronically. Despite the near-ubiquity of information technology and despite the increasingly prevalent use of CMC, there are still those who have never used it, would not know how to unless shown, or who know how to use it but are not confident in using it. When conducting a Citizens' POLIS, it is worth exploring firstly, whether potential stakeholder participants are able and willing to use electronic media, and if not whether they would consider being taught how to use it for such a purpose. Doing so can allow for a form of citizen-stakeholder interaction (with the aim being the former posing questions to the latter) which is direct in the sense that it is not mediated by a third party (i.e. the social scientist) but which is not intrusive in that it does not need to entail any personal information or contact details being revealed. Many stakeholders would no doubt be uncomfortable with citizen participants being given access to their personal contact information and would not wish to receive questions via their personal email account for example. Furthermore, for the citizens to have been given personal contact details by the researcher will have meant that the anonymity which is often customarily guaranteed to participants in social science

research projects (except to those who have requested otherwise) will have been compromised. As such, the preferred means through which citizens can ask questions of the participating stakeholders is through the use of those channels of communication which are built into the Citizens' POLIS itself.

Using existing channels is not only convenient, but is also anonymous, since the stakeholders can, like the citizens, use 'screen names' (although it would be necessary of course for the citizen to identify what stakeholder category they belong to, without being able to identify exactly who they were personally).[66] This could be achieved through the use of either the synchronous discussion room or the asynchronous discussion board, or a combination of both. The stakeholders could be provided with the URL for the Citizens' POLIS website, and asked to either respond to questions on the discussion board (by posting replies on the board) at a point (or at points) in-between the citizens' synchronous deliberation session, or by taking part in a special Q&A synchronous deliberation session with the citizens. In making such a decision, the social scientist will however need to bear in mind the difficulties which might one might encounter due to stakeholder schedules. Of course, citizens' commitments and timetables, as discussed above, also need to be taken into consideration, and negotiating between participants' timetables could also prove time-consuming. However, it is to be remembered that whilst citizen participants are to be compensated for their participation, stakeholders are not to be remunerated.[67] This can be highlighted in the case of the Citizens' POLIS on MTRH.

5.5.6 The Citizens' POLIS on MTRH

The Citizens' POLIS on MTRH provided facilities for both synchronous and asynchronous communication. Participants were able and were encouraged to use both

[66] An interesting and pertinent question posed by Dr Alex Faulkner was whether 'screen names' do actually anonymise participants in the same way as do pseudonyms conferred by the researcher. Although it is not clear whether the participants used existing screen names (which they may have had from previous, personal IM activities, they were told to use a name which did not reveal their 'real' identity outside of the chat room.

[67] This is a general statement and it is possible of course for stakeholder participants to also be offered compensation for their time. However, unlike the citizen participants, they are considered more traditional social science research participants. Unlike the citizens in the participation process, they are not performing any 'work' as such – i.e. they are not reading (and viewing etc) evidence and being asked to evaluate it (tasks which are time-consuming). Instead, like conventional social science research projects, they are 'simply' being asked to recount their pre-existing views and experiences of an issue in which they are already (highly) involved.

means of communication. As discussed above, these different forms of communication have different benefits (and also different drawbacks). To recap, synchronous deliberation is seen to be more immediate and therefore more resonant of FtF communication, whilst asynchronous communication is seen to be more considered and, due to its asynchronicity, less resonant of FtF communication. Based on his reading of previous research on online communication, the researcher decided that the two forms of online communication could generally serve two different purposes. The synchronous communication would constitute the bulk of the deliberation on the substantive issue of MTRH. A sample extract of the synchronous deliberation can be seen in *Figure 4* (see also Appendix G for a transcript extract). The asynchronous communication on the other hand, would serve as a means through which the citizens could put general and 'administrative' queries to each other and to the researcher, make additional substantive contributions to the synchronous deliberation, and post questions for the stakeholders to reply to.

It was felt that having the bulk of the substantive deliberation take place synchronously would foster a more cooperative approach to deliberation. Given that it was obviously not possible to satisfactorily address such a large and complex issue in one sitting, it was decided that a number of synchronous 'deliberation sessions' would need to take place. It is worth reiterating that the time allowed for deliberation should of course be commensurate with the scope, complexity and significance of the issue itself. Essentially, one can argue that it is never fully possible to allocate a definitive time for deliberation on an issue as complex and controversial as the one addressed in this research. As suggested above, there is a need to set limits on the time allocated to deliberation.

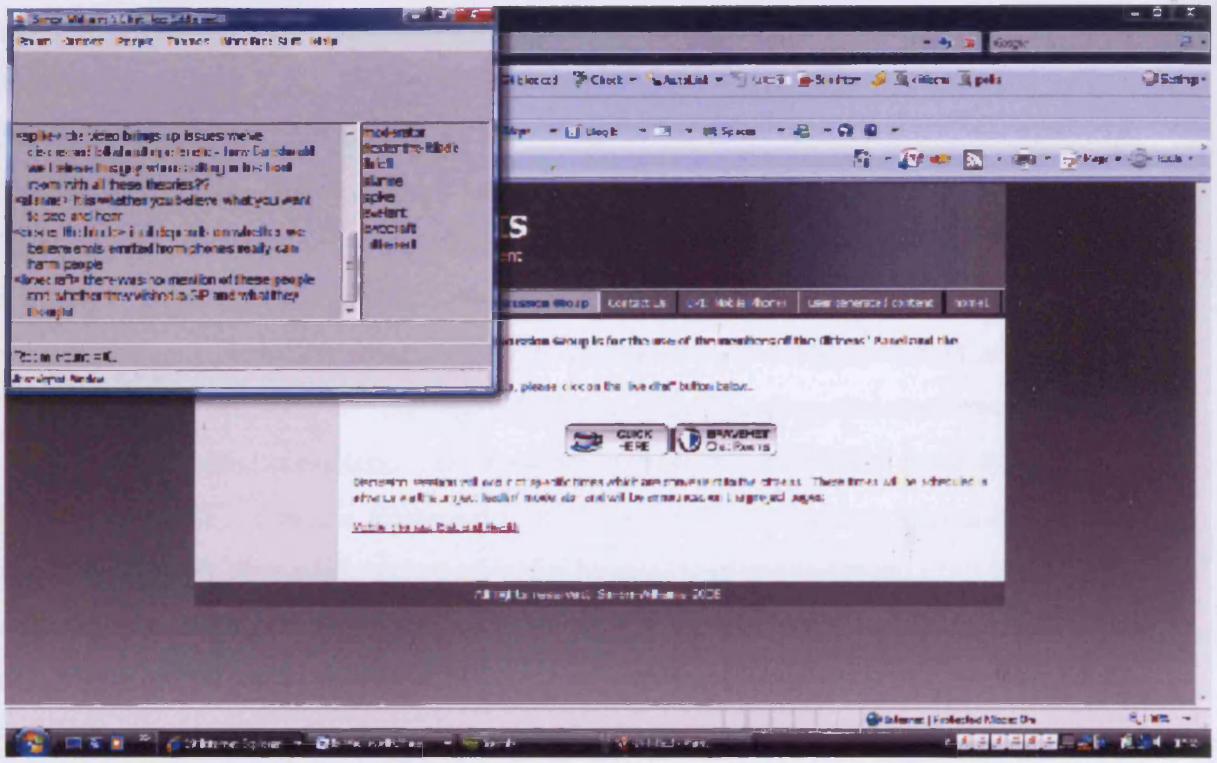

Figure 4: Screenshot of the Citizens' POLIS website and synchronous discussion ('chat') room (top left of screen).

In the Citizens' POLIS on MTRH, two considerations affected the final allotted time for synchronous deliberation. Firstly, in structural terms, previously-conducted background and in-depth research had set an agenda and produced evidence according to five main sub-issues (see stages 2 and 3) and so it made sense for five deliberation sessions to take place, one for each of these sub-issues (the decision to present the evidence according to these five sub-issues was made at the same time). Secondly, it was then necessary for the social scientist to decide exactly how long each of these five deliberation sessions should last. It was decided that each deliberation session would last approximately 1.5 hours. Two factors helped the social scientist make this decision. The first was that existing research suggests that between 1 and 2 hours is the optimum length for a focus group (Bloor *et al*, 2001). The second was that economic restraints were to be considered. As it had already been decided that the citizens were to be paid an honorarium for their participation, it was necessary to arrange the length of the deliberation sessions. All things considered, it was decided that five synchronous deliberation sessions each lasting approximately 1.5 hours would suffice. The citizens

were clearly informed before the research, and at numerous points during the research that they were (more than) welcome to carry on with their synchronous deliberations beyond this allocated time, although they it would be doing so voluntarily and would not be compensated for this extra time spent deliberating. On the whole, most deliberations lasted about 1.5 hours, although the final deliberation session did run to over 2 hours (although only half the participants actually stayed beyond the 1.5 hour mark).

Participants were also given the opportunity to communicate asynchronously via the discussion board. The researcher made clear to the participants that the board could be used for any purpose they wished and at any time they wished. Unlike the synchronous deliberation sessions, there was no limit as to how much time participants could spend using this facility. It was also made clear that there would be no specific compensation for their use of the discussion board (i.e. they were not to be 'paid per post' so to speak). It was indicated that their use of the discussion board was part of their overall participation, although there was no specific obligation to use it. Use of the discussion board was minimal at best. The board received only 3 posts throughout the research. The researcher was asked a number of general and administrative questions by individual participants, but they generally chose to email the researcher directly rather than use the discussion board. Also, there were no occasions in which the citizens posted issue-related substantive comments on the discussion board. Finally, although they were encouraged to do so, the citizens did not use the asynchronous discussion board to pose questions to the stakeholders. A number of questions were posed to the stakeholders, but these were formulated and expressed during the synchronous deliberation sessions. After having requested the citizens use the discussion board, and after not having received any responses, the researcher decided that he should follow this up in the synchronous deliberation sessions. As such, instead of being able to direct the participating stakeholders directly to the Citizens' POLIS discussion board – where they could have replied to the questions directly – the researcher was forced to take a more hands-on role as an intermediary. Those questions that were posed during the synchronous deliberation sessions were copied and then forwarded onto the stakeholders by the researcher via email. Most stakeholders contacted replied fairly quickly by email to the researcher. Their replies were then anonymised and made accessible to the citizens via the Citizens' POLIS website.

5.6. Analysing the deliberation

Data from the Citizens' POLIS on MTRH was analysed using a Grounded Theory (GT) approach. Although GT is a commonly used method of analysis in qualitative social science research, it is important to acknowledge that different versions of the method exist. There is a tendency to bastardise the method, and it is often assumed that all Grounded Theorists take a purely inductive approach to data analysis. In this thesis however, a particular version of GT was used which can be thought of as being more abductive than inductive; an approach which is more in line with the Pragmatist philosophy upon which this thesis is based. Before discussing this in more depth, it is first necessary to discuss an important element of the analysis process, to which the citizens themselves directly contributed.

5.6.1. Respondent validation

In producing a summary report, respondent validation (Bloor, 1978, McKeganey and Bloor, 1981) was used. Respondent validation (also referred to as member validation or member check) is 'the process whereby a researcher submits materials relevant to an investigation for checking by the people who were the source of those materials (Bryman, n.d.: 1). The main purpose of respondent validation is in improving the similitude between the researcher's understanding of the social setting and the understanding of the actors within the social setting (Bryman, n.d.: 1).

One of the main problems with respondent validation is in deciding what is to be validated and in particular whether respondents' should be expected to engage in the validation of the kind of interpretive work involved in sociological analysis. As Bryman (n.d.: 1) writes: 'Even if members ... can confirm the researcher's interpretations of their interpretations, it is unreasonable to expect them to do so in relation to the social-scientific rendering of those interpretations'. It is felt however that in this instance this is not a significant problem since, as argued above, this chapter seeks mainly to present findings whilst saving the more 'social-scientific renderings' for Chapters 8 and 9. That said, even in trying simply to 'present' substantive findings, the researcher's interpretative work is likely to affect the ways in which the participants'

views are presented. As such, it was felt that using respondent validation was beneficial since it is seen to add credibility to a study (Lincoln and Guba, 1985).

Another problem of member validation, as identified by Bloor (1997) is that it is sometimes difficult to get members to give as much attention to the validation process as the researcher would like, and so indifference can be taken as corroboration. However, in this study the participants certainly did not appear indifferent to the validation process. All participants agreed to read and comment on the drafted report. The researcher received a number of useful and interesting comments before second draft was prepared. This second draft was then sent to the participants. No major suggestions were made in respect to the second draft, which then became the final draft of the executive report.

The purpose of the member validation, in line with argument made above, was to ensure that the citizens' views were not misrepresented by the researcher. In this substantive findings section, the focus was specifically on what the citizens themselves said about the issue (in their own words) rather than on the researcher's more theoretical and methodological analysis of their deliberations (see Chapters 8 and 9). Whilst the validity of this thesis as a piece of sociological research relies on the latter, the validity of this thesis as a public participation process relies on the former.

5.6.2. Pragmatic analysis

As documented by Atkinson (2005) Grounded Theory – first introduced by Glaser and Strauss in 1967) - has been subject to many different interpretations, some of which fail to do justice to the approach as it was originally formulated (see also: Coffey and Atkinson, 1996; Atkinson *et al,* 2003; Richardson and Kramer, 2006; Bryant and Charmaz, 2007; Leigh Star, 2007). The version of GT used in this thesis is that as outlined by Atkinson (2005):

> [I]n one sense all productive sociological and anthropological analysis is "grounded": it depends on processes of abductive reasoning in the creative interplay between data and ideas, concrete instances and generic concepts.

Abduction (sometimes referred to as 'retroduction) is a form of reasoning that originated in the work of C.S. Peirce (). Peirce developed abductive logic as a way of more fully understanding the scientific method. Abduction also underpins the pragmatist approach to inquiry. As applied to social science it has been seen as a type of 'third way' between the Scylla of inductive reasoning and the Charybdis of hypothetico-deductive logic' (Atkinson *et al,* 2005). In practice it involves the analyst 'drawing out' possible abstractions from observed cases and using those to formulate working hypotheses that can in turn be tested against new cases and observations. It is an iterative approach to analysis. The analyst proceeds with a set of 'ideas' or 'guesses', derived from their research questions and reading of the literature, and these ideas and guesses are informally tested via a qualitative analysis of the empirical data. Because formal hypotheses are not being systematically tested, the main logic driving GT is not deductive. Conversely, because idea and guesses are always needed to order and direct our analysis, qualitative GT should not be thought of as being purely inductive.[68]

As discussed in Chapter 3, one of the purposes of the data analysis is to determine whether the Citizens' POLIS is an effective public participation process. This analysis will be presented in Chapter 9. It was noted that there is a distinction between formal analysis and informal assessment (Horlick-Jones *et al,* 2007). The analysis used here is informally abductive rather than formally deductive. As such, the data analysis is, seen to consist of a set of more flexible, iterative assessment criteria rather than a set of rigid evaluation criteria.

Because the citizens deliberations were conducted via the website's chatroom they were pre-transcribed, and were copied, passed and saved in a separate document. Data were analysed using *NVivo.* Using the GT approach discussed above, the data were coded abductively. Informed by general ideas and guesses, derived from the background literature and framed by the research questions, codes were assigned thematically. As noted above, the four criteria constituting 'good deliberation' served to frame the coding for the assessment of the Citizens' POLIS as a method for public participation. Themes

[68] As Coffey and Atkinson (1996) note: Our important ideas are not 'in' the data, and however hard we work, we will not find those ideas simply by scrutinizing our data ever more obsessively. We need to work at analysis and theorizing, and we need to do the intellectual, imaginative work of ideas in parallel to the other tasks of data management.

which helped to infer whether deliberative was 'cooperative' for example, were drawn out from the data (see Chapter 9). Similarly, themes which pertained to the concept of 'risk' were drawn out from the data (see Chapter 8). A more general approach to thematic coding was taken in Chapter 7, but again one which was based loosely on ideas about what might be prominent in a discussion of the issue of MTRH, from the point of view of the citizens. These ideas stemmed also from the researcher's prior knowledge of the issue, which was itself derived from prior reading and data analysis.

5.7. Conclusions

This chapter has served two main purposes. Firstly, it has acted as a methodological 'handbook' detailing the general features of the Citizens' POLIS as an adaptable process for public participation in S&T decision-making. Secondly, it has provided a more detailed methodological account specifically of the Citizens' POLIS on MTRH. The Citizens' POLIS it was shown is composed of 5 main stages: *forming the Ekklesia (Citizens' Assembly), setting the agenda, producing the evidence, presenting the evidence and hosting the deliberation.*

In *forming the Ekklesia*, two main choices must be made: choosing how many participants to use, and choosing how to go about selecting these participants. It was argued how in the Citizens' POLIS, as in most research projects, there is a tension between what the researcher might like to ideally and in theory, and what s/he can do in practice. For instance, there is much sound theory behind why a random stratified sampling technique is to be considered preferable. In practice however, such a technique was largely infeasible and as such a non-probability quota sampling approach was used. This was a pragmatic choice in response to the population that was available to the organiser. Perhaps one of the most striking conclusions to be drawn from the experience of attempting to form the *Ekklesia* in the Citizens' POLIS on MTRH was that there appears to be little inherent motivation amongst citizens to participate. As noted, it was only following the offer of honoraria that the organiser received significant (indeed, any) expressions of interest. This of course has implications for the feasibility of large-scale public participation programmes and indeed for voluntary citizenship in general.

In *setting the agenda,* the organiser acts as a 'guidance counsellor'. The term guidance counsellor(s) is felt to be more appropriate than 'steering group'. In line with arguments made in Chapter 4, in mesogenic participation processes, unlike in exogenic participation processes, the aim of the organiser is to simply to facilitate participation rather than control - or steer - it. Invoking Dewey's (in Boydston, 1990: 222) dictum, we can suggest that in guiding participation, and in avoiding controlling it, as has been observed in exogenic processes, the social scientist can serve to 'liberate deliberation' (see also Chapter 4.6) increase rather than limit the extent to which deliberation is free. To set the agenda, the organiser performs a framing or 'mapping' exercise, similar to those which are performed at the beginning of any research project. Based on their knowledge of the substantive area - acquired through literature reviews for example - the social scientist is able therefore to make the initial, but *provisional*, decisions as to what sub-areas of an issue are to be considered most important. Those areas to be discussed then determine the content of stage 3 – that is what evidence will be needed and who and where it should come from.

In *producing the evidence,* the organiser collects data using methods familiar to the social scientist. In the Citizens' POLIS on MTRH for example, the organiser primarily used data he had collected from interviews with representatives from the five main stakeholder groups. This was supplemented with documentary data taken from a variety of media and sources. After collecting 'raw' data, the organiser of the Citizens' POLIS then converts it into 'evidence' through a process of systematic editing. As is argued throughout this thesis (particularly in Chapters 4 and 5), the social scientist is best placed to organise a participation process by virtue of their comparative independence. However, to ensure as far as possible that the editing process has not misrepresented the experts' views, the edited data was sent back to its author (e.g. to the interviewee) for respondent validation, so that they could decide whether it is still satisfactorily representative of their viewpoint(s).

In *presenting the evidence*, the organiser of the Citizens' POLIS – as an electronic participation process – makes use of the hypermedia technology available to them. It is argued here that using hypermedia in participation *enables the complexity of the object of study* (i.e. the S&T issue) *and the mode of its representation* (i.e. visual and/or verbal, using e.g. images/typed documents/audio-visual media) *to be more fully and flexibly articulated.* As such, it is possible to argue that, in theory at least, using hypermedia allows for a more 'democratic' means of presentation. This is because, in being non-linear, it allows the

citizens more control over how exactly they engage with the evidence that is available to them. Evidence in the Citizens' POLIS on MTRH was presented using the following website: http://www.cpolis.co.uk .

Finally, in *hosting the deliberation,* the organiser seeks to create a suitable environment in which free and open deliberation can take place amongst the participants. Their primary function is to provide the *facilities and resources* for deliberation. The Citizens' POLIS, as an electronic participation process, requires what we have referred to - building on Bohman (1999) - as an 'institutional "virtual" space for deliberation'. This involves the use of both synchronous and asynchronous CMC. It has been argued that the bulk of deliberation in the Citizens' POLIS takes place synchronously, since this form of communication is more resonant of FtF communication, and as such can foster a more cooperative approach to participation. Although from a theoretical perspective, it is argued that the fewer restraints that are placed on the deliberation the better, from a practical perspective, it might be the case that there is a need for a trade-off between freedom and order.

After having discussed in detail the stages of the Citizens' POLIS, the task which remains is to discuss the results of the Citizens' POLIS on MTRH. This will take place in Chapters 7 to 9. First however, it is necessary to provide an overview of the MTRH debate, both substantively in relation to our Stage 1 data, and theoretically in relation to existing research within STS.

Chapter 6: The mobile telephones, risk and health debate

The purpose of this chapter is twofold: firstly, to serve as a summary of the substantive issue of MTRH and secondly, to provide a discussion of existing representations from the literature of some key STS concepts which are to be later explored using data from the Citizens' POLIS. For those unfamiliar with the MTRH debate, the chapter serves as a general introduction - a grounding for further analysis and discussion. As was noted in Chapter 1.1, the evolution of this research has seen the issue of MTRH move from being the main focus of the thesis *per se,* to being a substantive case study with which to test the Citizens' POLIS as a public participation process. As such, the results chapters of this thesis (Chapters 7-9) will discuss the issue in these terms –as an S&T case study.

The researcher's analysis and discussion of the deliberation in the Citizens' POLIS will consist of three main strands: substantive, theoretical and methodological (see Chapters 7, 8 and 9 respectively). As such, discussion of the findings of the deliberation will look at *what the citizens actually said about the issue*, *how what they said can be critically analysed in relation to existing representations of prominent conceptual themes within the STS literature* and *how the participants deliberated in practice (i.e. whether the Citizens' POLIS can be considered a 'good' public participation process).* In order to assess the latter, a normative discussion of what constitutes a 'good' public participation process was outlined in Chapter 3. However, for the methodological analysis in Chapter 9 to make sense, it is also necessary for the reader to have some background knowledge on the issue of MTRH (since they might not otherwise understand the more case-specific references made within the deliberation). To this end, the background knowledge provided in this chapter will again prove useful. Additionally, in order for a discussion of how data from the Citizens' POLIS contributes to a particular representation and understanding of key STS concepts, it is necessary to have an appreciation of existing representations and interpretations of these concepts, as derived from the literature.

Part 1 of this chapter will use the *stage 1* data from the Citizens' POLIS in order to introduce the reader to the key substantive elements of the MTRH debate. The aim of this part of the chapter is to present the issue from the perspectives of the stakeholders

involved in it. It will focus on the five key substantive themes: *base stations; biological effects; cancer; electrohypersensitivity* and *the precautionary principle.* It is important to reiterate that the data is not analysed sociologically to the same extent as in Chapters 8 and 9. In this chapter, my intention is not to make detailed critical arguments derived from my own analysis of the data. As was hopefully made clear in Chapter 3, this thesis can be viewed as constituting two types of inquiry. When viewing this thesis as a democratic tool for participatory decision-making (social inquiry), what is important is not what I as the researcher make of the MTRH debate, but rather on what the citizens themselves make of it. My focus as a researcher is on the secondary analysis of the citizens' primary analyses of the MTRH debate (i.e. on sociological inquiry). Chapter 7, as shall be seen, focuses on the descriptive presentation of the data rather than the more deeply theoretical and critical analysis of it. A further purpose of Part 1 is to provide the reader with an overview of the substantive evidence which was provided to the citizens in the Citizens' POLIS.[69]

Part 2 of this chapter will provide an overview of the social scientific literature, as it applies to the MTRH. The aim of this part of the chapter is to discuss existing research on and representations of views - particularly public views - on MTRH. Research is primarily drawn from STS but also includes a wide variety of literature, including some social psychological literature. This survey of the literature has identified three key theoretical concepts associated with public perspectives of MTRH: 'risk', 'precaution' and 'expertise'. These themes will then be used to critically examine the citizens' deliberations in the Citizens' POLIS (see Chapter 8).

[69] Of course, one means of doing this could have been to present the reader with the exact information (i.e. evidence) which the citizens themselves received. However the evidence, despite being edited and 'pruned' dramatically, still added up to a significant amount of data (the edited interview transcripts alone added up to c. 12,000 words). As such, those wishing to read this thesis - particularly those who are more interested in its methodological and theoretical, rather than substantive, dimensions – would doubtfully have the time (nor desire) to read all the information which the participants were given, in order to be 'brought up to speed' on the issue. As such, the primary purpose of this chapter is to provide a synopsis of the issue, and to provide enough of a grounding in the substantive issue for the reader to 'make sense of' subsequent discussion in the thesis (without asking them to spend too much time nor distracting them from what has become the main focus – that is the Citizens' POLIS as a public participation process). A small sample of the evidence is provided in Appendix G.

6.1. Stakeholder views on the issue of mobile telephones, risk and health – a discussion of the Stage 1 data

The means through which the preliminary data were collected were discussed in detail in Chapter 5, and as such need only be summarised here. The researcher conducted ten semi-structured interviews with a variety of key stakeholders drawn from the five main groups: scientists, activists, regulatory authorities and the mobile telecommunications industry. The researcher also consulted a wide range of documents, again from across the four main stakeholder groups. These included scientific publications, policy reports, activist websites and industry publications. The interview transcripts and documents were then edited in order to produce 'manageable' pieces of evidence for the citizens to deliberate over in the Citizens' POLIS. Of course, as discussed in Chapter 5 in order to edit the data, the researcher himself needed to thematise the data. Rather than simply presenting the full edits of all the expert evidence to familiarise the reader with the Stage 1 interview data in a more efficient manner, the most prominent themes can be presented and discussed within this chapter. The five main themes related to MTRH - base stations; biological effects; cancer; electrohypersensitivity; and the precautionary principle -will now be discussed in turn.

6.1.1. Base stations and health

In order for mobile telephones to work, they need to be connected to a network via a 'base station' or 'mast'. When making a call or using other applications, e.g. SMS ('text messaging') a radiofrequency (RF) signal is sent to the nearest base station, which then sends the signal to a digital telephone exchange and on to the main telephone network. This then connects the signal to the receiving phone, again via a base station. The area covered by a base station is known as a cell, and each cell is usually split into three sectors, which overlap with the sectors of neighbouring cells to create an uninterrupted network. When people travel, the signal is passed from one base station to the next, and typically never has to travel further than the nearest base station.

Each base station can only handle a limited number of calls at a time. In areas of high demand, additional antennas are sometimes added to a base station to send and receive more calls and other mobile services, or an extra base station is installed. All this means

that a large number of base stations are needed to allow more people to use mobile telephones, from more locations, and for coverage to be continuous when moving around (*Vodafone,* 2008). The implication of this is that as the demand for and use of mobile telephones has risen dramatically over the past decade, so too has the need for base stations. Subsequently, a growing number of people in most communities find themselves presented with the prospect of having to live near a mobile telephone base station. Whilst the phones (i.e. the handsets) themselves can, and often are either switched off or are inactive (i.e. are 'on' but are not being 'used'), the base stations are constantly on and are generally in constant use. This in large part has led to the controversy surrounding mobile telephone base stations and health. There has been significant debate related to the issue of whether living near to a base station, as a result of the constant exposure, could lead to adverse effects on health.

On the one hand, regulatory authorities, the mobile telephone industry and some independent scientists argue that there is little or no scientific evidence to suggest that mobile telephone base stations can cause any harm. One the other hand, anti-mobile telephone mast activists and some other independent scientists, argue that these guidelines are inadequate.

Some commentators in the debate focus on the idea that because RF radiation (and its absorption) can be measured, it is necessary to set guidelines, within which it is felt that mobile telephone base station emissions are unlikely to cause any adverse effects on health. The industry is particularly keen to point to the fact that radiation emission levels from base stations fall well within these national and international (ICNIRP) recommended guidelines:

> All of the systems that are built in the UK are built to comply with ICNIRP (International Committee on Non-Ionising Radiation Protection) guidelines
>
> (Interviewee K: Mobile Telephone Industry Representative, UK)

> Our networks operate at the lowest power levels that provide the standard of service required by our customers.
>
> (*Orange* Website)

The industry does concede that in the UK, like in many countries, there is no statutory requirement for mobile telephone operators to ensure that their base station emissions fall within international guidelines. However, they also emphasise that these guidelines are theoretically adequate, that they are always adhered to, and moreover that in practice levels of radiation are usually well within these guidelines – something which is confirmed by regular auditing of base stations by an independent body:

> Industry regulators have had a programme of base station audits, for the last 5 or 6 years, and even the highest exposure levels from those audits have been 279 times below those guidelines. And as I have said, lots of them are tens of thousands and even hundreds of thousands of times below those guidelines. So I think, looking at it from a pragmatic point of view, then it is probably unlikely that there is going to be an effect
>
> (Interviewee K: Mobile Telephone Industry Representative, UK)

However, there is no legal, statutory requirement for mobile telephone operators to ensure that their base stations emissions fall within these guidelines. Some scientists also focus on the measurable levels of base station emissions to argue that they are unlikely to produce adverse effects on health. They argue that because the power emitted by a mast is far lower than the power emitted by the phone handset itself, if there is any cause for concern, it should be related to the latter rather than the former:

> Basically, if you work out the received dose of anyone who uses a mobile phone for more than a minute a day, you will find that the dose they will get will be more from the phone itself than they will get from a mast. So, most scientists would say that it is most unlikely that masts cause harm
>
> (Interviewee A: Professor of Physics, UK)

Other commentators in the debate argue that not only are the regulatory guidelines not inadequate, but moreover that they are somewhat of a moot point in the debate as a whole. Some scientists point to the existence of 'cancer clusters' around mobile telephone masts, as evidence of the risk they pose to human health. They claim that not only is it possible for base stations to operate using lower power levels, but also that the guidelines do not take into account the full story. Guidelines only currently take into consideration power levels – that is whether the radiation is of a high enough intensity

to cause tissue heating (and therefore DNA breakage). These scientists would like to see possible 'non-thermal' or biological effects being taken into consideration also:

> The guidelines are in my view totally inadequate. The reason they are inadequate is because they protect you against what is, in the case of base stations, is not a problem – the ability of microwaves to cause thermal heating of a tissue.
>
> (Interviewee E: Retired Physics Researcher, UK)

> We believe that that short-term heating effects is not the issue with health concerns related to mobile telephony, and so we are asking for the so-called 'non-thermal', or biological-based, health recommendation levels to be considered also.
>
> (Interviewee D: Dermatology Professor, Sweden)

Furthermore, anti-mast activists argue that living near a mast can have many negative consequences. They talk of theirs and others' constant struggle to avoid what they claim is responsible for the variety of ailments and illnesses they have personally experienced:

> One couple had a mast go up at the bottom of their garden. They have had to completely screen their house, and she can only go in certain rooms. We also know of a few people that have sold up their houses, and are living in camper vans, and roam around the country trying to find places where they will be less affected by radiation
>
> (Interviewee M: Anti-mast activist, UK)

The activists also argue that the fact mobile telephone base station emissions fall within the set guidelines is somewhat irrelevant, since there are more subtle and complicated effects on the body from exposure to base stations.

6.1.2. Biological effects

As was noted in the previous section, the possible health effects of EMF radiation on the human body can be divided into two main categories: thermal effects and non-thermal effects. The latter are often discussed under the term 'biological effects' (as opposed to the more 'physical' effects of temperature increase within the body). There are a number of scientific studies which propose possible non-thermal mechanisms through

which biological effects could occur. Such mechanisms are often very complex and as such cannot be satisfactorily explained here. They are however discussed at length elsewhere (e.g. IEGMP, 2001: 42-45). Here it is sufficient to note that a non-thermal biological effect is basically any effect on the body that does not entail a significant increase in the temperature of body tissue. Amongst those which have received the most attention are the possible role of EMFs in the denaturation of proteins in the body - that is the movement of ions within the body and the movement of electrical currents through cell membranes (IEGMP, 2001: 42-45). These, it has been suggested could be responsible for a variety of physical effects, ranging from the beneficial (e.g. improved cognitive functioning) through to the severely adverse (e.g. acceleration of cancer formation).

Scientists almost universally agree that mobile telephone radiation cannot directly cause cancer in the short-term through thermal heating of body tissue. This is because the radiation's power (intensity) is too low for it to cause the breakdown of DNA (genotoxicity). However, this does not necessarily mean that mobile telephones do not pose any risks to health, since there is also the possibility of non-thermal biological effects:

> There is now scientific evidence, however, which suggests that there may be biological effects occurring at exposures below these guidelines. This does not necessarily mean that these effects lead to disease or injury, but it is potentially important
>
> (IEGMP Report, 2001: 3)

The regulatory authorities have produced in-house surveys of the scientific literature, and have also concluded that the evidence remains inconclusive and requires more research. Although they acknowledge the need for further research in this area, they do however argue that the current balance of evidence suggests that here are no established adverse biological effects - at least as far as DNA damage is concerned:

> Most of the studies into the role of RF fields as a potential carcinogen do not show a genotoxic effect at non-thermal levels.
>
> (Health Protection Agency)

Some scientists focus on the lack of experimental studies showing a link between EMF radiation and biological effects. They acknowledge that some studies do exist which might suggest non-thermal effects, but argue that because these findings have not been repeated they should not be taken as proof that mobile telephones have any non-thermal effects. In these scientists' opinion, most significant studies prove to be negative - i.e. show no biological effects):

> People are doing experiments, trying to come up with good ideas to explain a non-thermal effect, but so far there is nothing concrete. There are some studies showing it [a non-thermal effect] but usually the big studies then come up with nothing
>
> (Interviewee B: Epidemiology Researcher, Sweden)

Other scientists focus on the theoretical mechanisms by which non-thermal effects could occur. One such example is the relationship between the brain's electrical activity and EMF frequencies.

> Non-thermal effects could lead to health problems because they tend to undermine the body's natural ability to cope with health problems that might have occurred naturally anyway. An example is the acceleration of cancer development.
>
> (Interviewee E: Retired Physics Researcher)

In these scientists' opinion, the lack of experimental evidence to support these possible mechanisms is not due to the fact that such mechanisms do not exist in actuality, but is rather due to the absence of the 'right' kinds of experiment. These arguments are related to the perceived role of the mobile telecommunications industry in funding scientific research. Research in this area, in the UK at least, is funded jointly by government and the industry. This has led some scientists and many activists to claim that the industry exerts an undesirable influence on the research, whereas the industry claims that they do not have any involvement, and the research itself is entirely independent:

> The official bodies and authorities that sieve the information towards government are heavily infested by the industry, and this is not hidden this is on public view. So they sit on certain chairs, or if they don't sit there, they give money to those who do sit. And they all sing in favour of this technology [i.e.

> mobile telephones]. So the ministers, or the prime minister or whoever, get a very skewed form of information
>
> (Interviewee D: Dermatology Researcher, Sweden)

> A lot of people come at this issue of biological mechanisms from a certain standpoint, and suggest that there is some kind of conspiracy between the industry and the mainstream scientific industry to cover up all these effects that they believe are out there. But that is just not the case. We don't get involved in scientific studies.
>
> (Interviewee K: Mobile Telephone Industry Representative, UK)

6.1.3. Cancer

Due to the seriousness and sensitivity of the disease, it is not surprising that the issue of cancer has figured prominently within scientific and public debates on MTRH. The issue of cancer focuses on the distinction between the short-term and possible long-term effects of mobile telephone use. Research on the short-term effects looks at epidemiological data of people who have been using mobile telephones for less than ten years, to see if there is a 'greater than normal' percentage of people developing cancer – i.e. compared to 'control' groups (those who have not been using a mobile telephone).

Most scientists, and the mobile telecommunications industry, argue that it is unlikely that there are any short-term effects, because there is little evidence to show an association and no 'plausible' theoretical mechanism for cancer-formation has been proven.

> The encouraging thing is that of the research that has been done so far, almost all of it is showing no link between mobile phones and cancers, for people who have used mobile phones for less than ten years.
>
> (Interviewee A: Professor of Physics, UK).

The real debate relates to whether mobile telephones cause cancer in the long-term, in cases where use is greater than ten years. It is widely acknowledged that future research is needed in this area, in part because mobile telephones have only been used widely for a relatively short period of time. Added to this is the fact that many cancers have what is referred to as a 'latency period' – where they take 15-20 years to develop.

Subsequently, it is generally felt that determining whether there are long term effects of mobile telephone use will take time:

> ... the situation for longer exposures is less clear and the Committee has identified a need for further work in this area
>
> (MTHR, 2007: 9)

Some early epidemiological studies have shown an association between long term use (approximately ten years) and a tumour on the ear called acoustic neurinoma. These same studies however have shown no association between EMF exposure and other forms of cancer:

> For long-term use (that is, using a mobile phone for more than ten years), it might be that there is an association for acoustic neurinoma, which is a kind of benign tumour, a slow-growing tumour in the ear. However for brain tumours, which is [sic] much more serious, we haven't found anything.
>
> (Interviewee B: Epidemiology Researcher, Sweden)

Whilst most scientists agree that exposure to handsets and base stations cannot cause cancer in itself, they do argue that there is a possibility that it could accelerate or complicate the growth of existing cancers in the body (see biological effects above). Added to this is the view of the activists, who draw on their personal experiences in order to argue that their cancers were caused by them being exposed to mobile telephone mast radiation:

> We lived here before the mast and we were fine. It was a really healthy, thriving community. We had mortality levels checked out. Up until we had our cluster, our village was one of the healthiest places in this part of the country. And I believe that led towards my breast cancer ... because everything else about my lifestyle was healthy and I had no history of it in the family.
>
> (Interviewee L: Anti-mast activist, UK)

6.1.4. Electrohypersensitivity

Electrohypersensitivity (EHS) (also sometimes referred to as electrosensitivity or electrical sensitivity) is a highly contested condition. Indeed, a World Health

Organisation workshop concluded that the term EHS should not be used, since it implies a causal link to Electromagnetic fields (EMFs) – a link which they argue has not been proven. Instead, they use the term 'Idiopathic Environmental Intolerance with Attribution to Electromagnetic Fields' (IEI-EMF)[70].

In the UK, the MTHR Programme:

> ... has supported the largest and most robust studies of electrical hypersensitivity yet undertaken anywhere and these have offered no convincing support for the hypothesis that the unpleasant symptoms experienced by sufferers result from exposure to mobile phones or base station signals.
>
> (MTHR, 2007: 20)

Some scientists agree with these official statements and argue that it is not possible to diagnose people as suffering from a specific impairment or disability, or certainly not one which is clearly attributable to EMF exposure. Whilst they are happy to acknowledge that the symptoms people report – such as headaches, nausea etc., exist, they deny that these are caused by exposure to EMFs. These scientists, as well as the regulatory authorities, suggest that it is not possible to rule out a psychological element in the development of these symptoms. They point to the negative results of recent experiments which sought to test EHS-related claims:

> People who are sensitive will give us quite detailed accounts of what happens to them, for example: ' I get a headache when I'm using a mobile phone' or 'when I'm near a mast I get a heaviness in the head and feel dizzy and disoriented' or 'when I'm around powerlines I feel shaky and strange'. So it is very variable, but they are all quite vague in the sense that they could be caused by anything really – it could be the flu , a cold, could be a virus – it is really hard to say. But there is no biological mechanism that has been uncovered, and there has been a lot of research by really, really good scientists across the globe.
>
> (Interviewee C: Psychology Researcher looking at EHS)

[70] The term 'idiopathic' simply means that the cause of a person's symptoms or illness is unknown. It should be noted that those speaking 'for' mobile telephones generally prefer the term IEI-EMF when taking about this issue, whilst those speaking 'against' mobile telephones generally use the term EHS. For convenience however, many speaking 'for' mobile telephones also use the terms EHS, and for this reason also, this thesis generally refers to this condition as EHS rather than IEI-EMF.

Other scientists however, are keen to point out that there could be a link between these symptoms and EHS, which in their opinion, should be considered a physical impairment. They argue that countries like the UK that do not recognise EHS, are 'behind' countries like Sweden that do recognise it. They cite studies which have found a significant relationship between EMF exposure and symptoms like headaches as evidence, and argue that although such symptoms are not life-threatening, they are still both distressing and preventable:

> People who are electrohypersensitive in the UK I think have a somewhat tougher time there than here [in Sweden], because in May 2000 it [EHS] was officially acknowledged as being a functional impairment ... There are studies clearly pointing to EMFs. Even if they don't initiate this impairment, they will be one of the negatively driving factors making life harder for them ... Of course, you don't die of a headache, but as I always ask people when I give a lecture – do you want to have more headaches because you use your mobile phone? Everyone I have asked, including those from the telecom industry has said 'no, for goodness sake, of course not'!
>
> (Interviewee D: Dermatology Professor, Sweden)

Sufferers of EHS describe the severity of their symptoms, and argue that it the link to EMFs is real and not 'all in the mind':

> And also, symptoms vary from day to day to day. If I sleep tonight now, then I might not necessarily sleep the next night. Also, if I am moving around, in my car, or if I go somewhere in built-up areas, then I cannot predict with any certainty how I am going to feel. If I was exposed all day, then I would probably be unconscious, my neurotransmitters would be out for days, and I would probably feel like I was dying.
>
> (Interviewee O: EHS sufferer and activist)

6.1.5. The precautionary principle

The first notable attention paid by the UK government to the issue of MTRH was the 'Stewart Report' of 2000. As noted in Chapter 1, this was a response to growing public concern and increasing media attention in the late 1990s on the issue and in regard to the possible risks to health. The then Minister for Public Health, Tessa Jowell, requested the National Radiological Protection Board (NRPB) (now part of the Health

Protection Agency) that an 'Independent Expert Group on Mobile Phones (IEGMP) be established. The terms of reference of the 'Stewart Group' were:

> To consider present concerns about the possible health effects from the use of mobile phones, base stations and transmitters, to conduct a rigorous assessment of existing research and to give advice based on the present state of knowledge. To make recommendations on further work that should be carried out to improve the basis for sound advice
>
> (IEGMP, 2000)

The group were headed by former Chief Scientific Adviser to Government, Sir William Stewart. The Inquiry was conducted over a ten month period in 1999/2000 in which evidence was received from across the UK – following adverts in national newspapers and *New Scientist* magazine - and in which international evidence was also taken into account. There were also open 'public meetings' in five major UK cities.

Upon the completion of its Report, the Stewart Group noted:

> We conclude therefore that it is not possible at present to say that exposure to RF radiation, even at levels below national guidelines, is totally without potential adverse health effects, and that the gaps in knowledge are sufficient to justify a precautionary approach ... [and that] this be adopted until much more detailed and scientifically robust information on any health effects becomes available
>
> (IEGMP, 2000)

The results of the report were disseminated to parliament and the devolved governments. The Report recommended a 'precautionary approach' to mobile telephone use. A more theoretical and conceptual discussion of a precautionary approach and the precautionary principle will be discussed elsewhere in this chapter (see section 2.2.). In specific reference to the issue of MTRH, the Stewart Report advised that a precautionary approach entail measures such as: promoting further research; limiting children's use of the technology; encouraging the limitation of non-essential calls; and tightening of access restrictions to base stations. However, the Report did support the ICNIRP EMF guidelines, since in their opinion the balance of evidence suggested that operating within these guidelines would not cause adverse effects on health. They also stated however, that they were not convinced of the need to

convert these guidelines into statutes (Stewart Report, 2000: 113; see also, Chapter 6.1.1.) above). The Report also recommended that information be disseminated to the public through the use of advisory leaflets.

The mobile telecommunications industry usually frames its approach to the issue of MTRH in terms of 'precaution' and usually cites the Stewart Report as the authoritative source of its advice on this matter:

> But like most areas of scientific interest, research into the alleged health effects of mobile phones is ongoing - and no one can provide all the answers. We support the 'precautionary approach' recommended by the Independent Expert Group on Mobile Phones' Stewart Report (2000).
>
> (*Orange* Website)

In Part 2 of this Chapter, we turn to a more conceptual discussion of 'precaution', as well as of 'risk' and 'expertise' to see how these concepts have been represented and interpreted previously in social scientific studies of MTRH.

6.2. Mobile telephones, risk and health in the social science literature – public representations of key STS themes

The major social scientific work on the issue of MTRH is Burgess' (2004) *Cellular Phones, Public Fear and a Culture of Precaution.* This book serves as a sociological monograph on the subject in that it 'examines the origins and development of health concerns associated with cellular phones, focusing primarily on Western Europe, North America and Australasia (Burgess, 2004: 1). Writing from a social constructivist position, Burgess (2004) addresses a number of sociological themes related to the issue. As is suggested by its title, two of the book's main conceptual themes are the public perception and construction ('public fears') of cell phone risk and the 'culture of precaution' surrounding cell phone policymaking. Another major theme is the role of stakeholders and 'expertise' in constructing the mobile (cellular) phones, risk and precaution debate (in a section entitled 'claims and claims-makers').

Burgess' monograph aside, there are a (albeit limited) number of journal articles published from within the social sciences. In his review of Burgess' book, Chapman (2004: 836) notes how despite 'innumerable' popular commentaries, there has been 'surprisingly little' social scientific scholarship examining the subject. A set of keyword searches using a social science database returned a total of 23 articles.[71] The majority of these studies take specifically mobile telephone base stations as their substantive topic, primarily because it is these which have received greatest attention in terms of public concern or 'fear' (e.g. Burgess, 2002; Drake, 2006; Siegrist et al, 2005; Law, 2007; Wiedemann *et al*, 2008). However, some do, as in the case of Burgess' book and this thesis, take mobile telecommunication technology as a broader substantive topic (e.g. Barnett *et al*, 2007; 2008; Moore and Stilgoe, 2009; Soneryd, 2007; Stilgoe, 2005; 2007; Timotijevic, 2006; Walls *et al*, 2005).

As a brief digression, this is perhaps an appropriate place to note that despite the increasing ubiquity in terms of its use (in technologically 'advanced' countries) even less attention has been paid to public fears concerning wireless internet technologies, known as WLANs (Wireless Local Area Networks) (examples of which include WiFi and WiMAX). There is however good reason as to why there is little sociological attention specifically to this substantive topic. This is because public concerns or fears are 'yet' to emerge (they may of course never emerge). Although public concern in the context of mobile telephone EMFs is now well-established on an international scale, as reflected in media attention (and to which Burgess' book attests), a comparatively negligible amount of public attention has emerged in regard to WiFi for example. Also, although it is still uncertain (as Part 1 of this chapter has shown) there has at least been a significant amount of scientific attention to the possible risks of mobile telephone EMFs. In terms of wireless internet however, there has been comparatively little scientific research undertaken on the possible effects on health. This of course is in no small part dependent on the fact that we are yet to see significant public concern (in the media or in the form of public campaigning) regarding wireless internet technologies. As was discussed in Part 1 above (6.1.5), funded scientific research into MTRH only really started to accumulate at pace in the UK *following* the Stewart Report

[71] The database used was the *International Bibliography of the Social Sciences.* The keywords used were "risk" and "health" as well as "mobile telecommunication technology" and its permutations (e.g. "mobile phones"/ "mobile telephony"/ "cell phones").

(2000) which was a response to public concern. As such, it is arguable that the same might hold true for wireless internet technologies. That is, if public concern were to emerge, then so too might funded scientific research into wireless internet technologies. Until this occurs, it seems as though there is little about this substantive area which warrants sociological attention (apart from perhaps a discussion of why concerns have *not* emerged, which would no doubt prove interesting in its own right). At present, it is too early perhaps to know whether or not wireless internet technology will become a focus of public concern and therefore of sociological attention. What is to be understood as a 'new' technology is in many respects a subjective consideration. If we are still to think of mobile telephones as a 'new' technology, then wireless internet technologies must be thought of as a considerably 'newer' technology. Over the past decade, the author's long-standing interest in this substantive area has allowed him to see the debate over 'mobile telecommunication technology, risk and health' develop in real time. The decade has however also witnessed remarkable and rapid developments to the technology itself.

To an extent then, scientific research on health and risk, sociological attention on public concern, and even public concern itself, at times struggle to keep up with these rapid technological developments. It would not be of great surprise to the author if the public concern over specifically mobile telephones was supplanted over the next decade by public concern over specifically wireless internet technologies. Possible points of conflict over the extension of WiFi to public places and spaces, and in particular to schools, might see a concomitant growth in the amount of concern over the possible long-term exposure to additional sources of radiation.[72] Following this slight digression, we now return to the focus of this thesis, namely MTRH. After having read the surveyed publications, it can be seen that many of them address the same themes as Burgess' book. The remainder of this chapter will focus in turn on the three main conceptual themes in the literature – namely 'risk', 'precaution' and 'expertise'.

[72] Irrespective of whether it does become a public issue on the same scale as the MTRH debate, it is the author's intention to follow the development of wireless internet technologies in the near, and possibly not-so-near, future.

6.2.1. Risk

The issue of risk, as it relates to science, technology and society has been, paid considerable attention by sociologists, something that gathered pace during the 1990s (Horlick-Jones, 2003). The social study of risk is motivated largely by the view that an approach to risk assessment based purely on quantitative and scientistic methods, is too narrow and fails to provide a full understanding of such a complex concept.

It is said that we live in a 'risk society' (Beck, 1992) in which multiple risks interact in our everyday lives. As such, risk concerns over cell phone radiation cannot be seen in isolation and must be 'situated within a wider climate of heightened sensitivity to everyday risks ... such as possible harm from everyday foods and objects' (Burgess, 2004: 24). Risk, as a sociological subject has been discussed from both the macro- and the micro-sociological levels. At the same time as it can be used to define society at large, it can also be studied in its local, everyday context. Either way, if risk is so pervasive then it is easy to see why social scientists have deemed it such a worthy object of study. The most notable macro-theory concerning risk, is proposed by Beck (1992) and Giddens (1992). Their 'reflexive modernisation' thesis serves as a Weltanschauung; a way of seeing the world through a risk-centric framework. This framework requires that risk be understood as a social phenomena and not something understood through numbers alone. More empirically-minded scholars have looked at how risk is understood in an everyday context and by lay publics (e.g. Walls *et al,* 2004). Such analyses acknowledge meta-theories of Giddens and Beck (Horlick-Jones, 2004). Arguably however, their work relates more to Douglas and Wildavsky's (1982) 'cultural theory of risk', which suggests that perceptions of risk can vary between different cultures (see also, Rayner and Cantor, 1987). However, what we might refer to as micro-sociological analyses of risk are more detailed still than the cultural theory approach. These analyses are discuss risk on an even more local level and look to relate wider theories risk is constituted by various publics in their everyday lives.. Case studies include the perception and construction of risk as related to climate change (Hinchcliffe, 1996, 1997; Bulkeley, 2000, 2001) and pollution (Irwin, Jones and Stilgoe, 2006; Bush *et al,* 2001; Horlick-Jones *et al,* 2003). Horlick-Jones (2004) has questioned, in an ironic fashion, whether experts in risk exist. He notes also how much of the literature on risk perception and risk communication has focused on the not

infrequent mismatch between lay and expert assessments of risk issues (Horlick-Jones and Prades, 2009). The question of expertise as it relates to issues surrounding science and technology and risk and uncertainty will be discussed in more depth later in this chapter (6.2.3.), and which will be returned to empirically in Chapter 8.3. It is important to note however that this body of empirical research has helped to develop frameworks, related to the social perception, construction and 'amplification' of 'risk'.

The social amplification of risk framework (SARF) is one such framework, being an attempt to address 'one of the most perplexing problems in risk analysis', that being 'why some relatively minor risk events, as assessed by technical experts, often elicit strong public concerns and result in substantial impacts upon society and economy' (Kasperson *et al*, 2006). The framework suggests that technical assessments of risk interact with psychological, social, institutional and cultural processes in order to amplify or attenuate those assessments (Kasperson et al, 2006). One of the most important of these institutional processes is the role the media play in mediating public communication. It is well established how the media, as 'entrepreneurs of meaning' can impose certain interpretations of a given risk onto their readers or viewers, thereby being potential risk amplifiers or attenuators (Petts *et al*, 2001). Burgess (2004) ties these arguments specifically to mobile telephones. He notes (p. 217) how 'there are many other health risks [than mobile telephones] far more tangible and prevalent across even the most advanced societies, which struggle to achieve such a high level of attention'. These more 'tangible' health risks include the aforementioned 'everyday' risks from foodstuffs for example. Indeed, addressing the question of why mobile telephones have generated such public concern despite it being seen as a 'phantom' risk, 'exonerated by scientific study' is the central thesis of Burgess' book, and one which relates more broadly to the SARF project. Burgess (2004: 217) notes how 'social pressures' played a significant role in the official response to the issue.

Although, as discussed in Chapter 4.6.1, some within STS have questioned whether STS has traditionally tended to 'side' with the underdog (Ashmore, 1996), the aim of many constructivist accounts is simply to take the laypersons and forms of civic intelligence seriously. There are a number of studies which have sought to understand the issue of risk from the layperson's perception of it. We might consider this a *verstehende* approach to public understanding of risk. Qualitative studies show how

individuals, through their interactions with other individuals, institutions and the media, constitute and manage risk in their everyday lives. The focus here is usually on more 'naturally-occurring talk'; on what we referred to in Chapter 4 as more 'organic' forms of public engagement with science and technology (as discussed in Chapter 4).

As well as the SARF, social psychology research has also made significant contributions to the public perception of risk. Slovic *et al* (2002) have proposed the 'affect heuristic'. This is a theoretical framework which can be used to understand the role of affect (i.e. the emotional experience of 'goodness' or 'badness') resulting from a positive or negative stimulus. As applied in the work of Slovic *et al* (2002), affect is seen to be 'an important component of human judgement and decision-making'. It is important to note that these feelings and emotions are responsive and somewhat involuntary, as a result of the stimulus. Early work on affect and risk by Fischhoff *et al* (1978; also Slovic, 1987) has drawn two notable findings: Firstly, an individual's perception of risk correlated strongly with the degree to which the issue or object evoked feelings of dread. An example would be activities associated with cancer being seen as much riskier and in need of regulation than other activities associated with 'less dreaded' forms of illness. Secondly, an individual's perception of risk and benefit are negatively correlated. That is, for many activities or artefacts, the greater the perceived benefit, the lower the perceived risk and vice-versa. Smoking and food additives are examples of an activity or artefact which are commonly perceived as being relatively high in risk and low in benefit. Vaccination and antibiotics on the other hand are seen as being relatively low in risk and high in benefit. It has been suggested also that reducing the time available for analytic deliberation allows more room for affective considerations, which in turn enhances the inverse relationship between perceived benefits and risks (as summarised in Slovic *et al*, 2000). Amongst other things, one major implication of this work is to show how deliberative decision-making can differ from non-deliberative decision-making. The less deliberation involved, the more a decision is likely to be stimulus-based, responsive and based on feelings and emotion rather than on reasoned consideration of possible future consequences (see Chapters 3 and 5).

Although theories like the SARF and the affect heuristic are useful analytical tools for, some have noted that research still focuses too heavily individualistic,

cognitive/information-processing and instrumental conceptions of human risk-related behaviour (Horlick-Jones and Prades, 2009). Within an organised deliberative environment such as the public participation process the focus is on how perceptions and understandings of risk emerge within the group setting. Although, as Chapter 8.1. will discuss., citizens bring their existing everyday knowledge and understanding of risk to bear on the deliberation, they are also influenced by the knowledge and understanding of their fellow citizens. There is of course a difference between these individualistic, cognitive models of the public understanding of risk and the understanding of risk in a deliberative participation process. Whereas the former focus on monological decision-making, the latter focus on dialogic decision-making. Furthermore, as will be discussed further in Chapter 8, whereas the former looks at how individuals' perceptions of risk derive from more 'organic' sources of public information (such as the mass media), the latter looks at how a group of citizens perceive risk following an engagement with a variety of information sources derived from a variety of experts (see also Chapter 6.2.3).

In the Citizens' POLIS, the participants have not previously been politically engaged with the issue of risk regarding MTRH (or they have at least stated they have no prior active involvement with the issue that requires disclosure). Unlike those studies in which a public is *already* engaged with a risk-related (S&T) issue, the citizens in this research did come to the process with a history of engagement with the issue, and therefore, we might argue, a predetermined political position.

Social-psychology research on group interaction has found that the greater deinividuation experienced in the group environment leads to greater 'group polarisation'. Group polarisation can be understood as the tendency of individuals to become more extreme in their thinking following group discussion (Lea *et al*, 1990; Postmes *et al,* 1999; Spears *et al,* 2002). As was discussed in Chapter 3, in anonymous CMC environments, because deindividuation is seen to be greater, then so too is the polarisation of viewpoints within the group (i.e. individual views become more extreme) (e.g. Sia et al, 2003; Lee, 2007). This will be borne in mind when discussing the results of the Citizens' POLIS, given that based on this existing research, one would expect to find evidence of group polarisation in this AV-anonymous participation process.

6.2.2. 'Precaution'

It was suggested in the introduction to this section that the reason as to why there is little political and scientific attention being paid to wireless internet technology as a possible risk to health is because it is yet to be seen as a source of significant public concern. Whilst this is true to an extent, is it also important to acknowledge that public concern – that is the public perception of risk – is itself affected by political and scientific attention to that issue. Burgess (2004: 67) notes this in regard to mobile telephones, where he suggests that 'precautionary advice and activity can itself animate risk perceptions'. In this sense, political attention to the issue (i.e. precautionary advice) is a catalyst for, and not necessarily a response to, public concern. This argument has also been made through findings in some recent experimental studies. Firstly, Barnett *et al* (2007; 2008) also concluded that 'precautionary advice was generally interpreted as *causing* concern rather than providing reassurance [emphasis added]. They found that contrary to their expectations those who were generally most concerned about uncertainty had the greatest existing concern about precautionary advice and those who had low existing concerns about uncertainty had lower levels of concern about precautionary advice. Secondly, Wiedemann *et al* (2005, 2006) have drawn very similar findings, and suggest that because precautionary advice fails in its intended task (i.e. to reassure the public), and therefore 'has no positive effect' on trust in public health protection, 'better' communication about precaution needs to be designed. Given that the participants in the Citizens' POLIS on MTRH were provided with the precautionary advice (including the UK Government's advisory leaflets) an interesting consideration (followed up in Chapter 8.2) is whether their concern was 'animated' or whether the participants were reassured by their engagement with this precautionary advice.

The difficulty of deciding whether precautionary advice is caused by concern, whether concern is caused by precautionary advice or whether they are indeed co-constructed, no doubt in part stems from the broader problem of defining precaution *per se.* It appears as though precaution defies a single, agreed-upon definition. Levidow and Carr (2006: 258) observe the paradox that 'as precaution is more widely accepted, its meaning becomes more contentious'. They note also that even amongst 'experts', there is disagreement on the definition of 'precaution' leading to the existence of different

accounts (Levidow and Carr, 2006: 258; e.g. Oreszczyn, 2005). In an attempt to offer a generalised definition, they have recourse to the original (or at least the best-known) formulation of the precautionary principle, as principle 15 of the Rio Declaration (1992):

> Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Using this definition, it can be suggested that there are two salient conceptual constituents of this principle.[73] One feature of precaution is the role of *costs*, both in terms of adverse effects on, for example the environment, and also in terms of economic costs. A second feature of precaution is the role of uncertainty, or specifically scientific uncertainty, in justifying a precautionary approach.

Any attempt to define precaution must therefore first seek to define 'uncertainty'. This is itself not a straightforward task, and perhaps paradoxically some have worked to offer certain accounts of what is to be understood by 'uncertainty'. Wynne (1992) for instance, has argued that there are four main types of uncertainty: *risk, uncertainty, ignorance* and *indeterminacy.* The four types can be distinguished according to the degree of knowledge we do or could have about a system about which a decision is to be made. Risk is where the phenomena under study is 'basically well known, and the chances of different outcomes can be defined and quantified' (Wynne, 1992: 114). Uncertainty is where 'we know the important system parameters but not the probability distributions' (Wynne, 1992: 114). Ignorance is where we '[d]on't know what we don't know' (Wynne, 1992: 114). Finally, indeterminacy is where 'knowledge is ... *conditional* knowledge depending on whether ... pre-analytical assumptions might turn out to be valid'. This sociological classification of the different types of uncertainty reminds one of a similar articulation made by the former US Defence Secretary Donald Rumsfeld. In discussing policy following the commencement of the Afghanistan War, Rumsfeld argued:

> There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we now know we don't

[73] These are of course only two possible defining characteristics of a precautionary approach, using specifically the Rio Declaration's formulation. For a wider discussion of the definition of 'precaution' and its relation to policy, see: Klinke et al (2006).

> know. But there are also unknown unknowns. These are things we do not know we don't know
>
> (Rumsfeld, 2002)

Although this argument has been widely derided by the world's press, when taken as an epistemological and sociological statement, it is quite perceptive. Essentially, Rumsfeld's 'known knowns' resemble Wynne's conception of risk, his 'known unknowns' resemble Wynne's conception of uncertainty, whilst his 'unknown unknowns' resemble Wynne's conception of ignorance. The question of course is to which type of uncertainty does precaution best relate? Clearly from its Rio Declaration formulation, precaution does not refer to either risk or ignorance. One does not take precautionary measures if there are probabilstic risks (known knowns). Rather one takes preventative measures. Also, one *cannot* take precautionary measures if one is unaware – that is, ignorant - of that which is uncertain (unknown unknowns). As such, it is arguable that the concept of precaution is related more to indeterminacy and uncertainty.

Harding (1998:166) has used the example of emerging technologies to illustrate indeterminacy. He points to the importance of social context in determining whether a technology poses a risk. The control, maintenance and operation of, and the procedures associated with, a technology may vary between different social contexts, for example, between different countries or even between different individuals. In such cases, scientific knowledge about a risk is conditional on these factors remaining the same (Harding, 1998:166).

Precaution perhaps relates best to uncertainty narrowly-defined, or in Rumsfeld's terms, to known unknowns. Here one knows that a potential threat exists, but one is unaware of the probability that it will actually result in adverse effects and to the extent of these adverse effects. Climate change is of course a good example of this (Shackley and Wynne, 1996). Chapter 8.2 will discuss the example of MTRH, and through the citizens' deliberations, will explore how they understand precaution in terms of the classification of the different types of uncertainty.

In a well-known study, Levidow (2001) problematised the relationship between 'precaution' and 'uncertainty' by suggesting that instead of simply seeing the latter as a means of justifying the former, in some cases the former can also be used as a means to justify the latter. Precaution then can justify uncertainty. As Levidow *et al* (2005: 273) note, different individuals' accounts of precaution correspond to which uncertainties are deemed 'relevant' or 'acceptable'. The 'acceptability' of certain risks over others has been discussed in the previous section. Klinke *et al* (2006) also emphasise that the relationship between precaution and uncertainty also rests on an incapacity for probabilistic risk assessment. They note that 'highly non-linear' or 'chaotic' relationships cannot be adequately addressed by probabilistic techniques, which means quantitative analytical models are limited in such cases (Klinke *et al,* 2006: 328). This has also been discussed in the previous section. However, it is important to emphasise that in 'expert' risk assessment, the existence of random risk is being increasingly acknowledged, with more qualitative methods increasingly supplementing rather than supplanting more traditional quantitative methods. An important element of a precautionary approach to public policy is therefore the 'communication of uncertainty' (e.g. Barnett et al, 2007). This is of course a problematic task given the aforementioned possibility that communicating uncertainty (in the form of precautionary advice) can often cause rather than assuage public concern.

On an institutional level, it has been noted that there is a tension between precaution and scientific innovation and progress (e.g. Stirling, 2007), with the more extreme argument being that a precautionary approach 'stifles discovery' (Holm and Harris, 1999). Others however, have looked more favourably upon precaution as an approach to policymaking in areas of scientific uncertainty, arguing that precaution can serve as a 'compass direction society towards practices that are more ecologically sound, health promoting, and sustainable (Tickner *et al,* 2003: 492).

Turning to the role of potential *cost* in the development and use of precautionary advice, it is possible to see this as one half of an 'equation'. Precaution as an approach to risk assessment can be thought of as the weighing together of potential costs incurred and potential benefits to be gained. It is to be noted that the term 'equation' is parenthesised in reference to the previous characteristic of precaution, namely the scientific uncertainty. Whereas in areas of risk assessment, where the science is 'certain', costs

and benefits can be straightforwardly quantified, the same cannot be said of areas where the science is uncertain. Looking at the role of 'precaution' specifically in the MTRH debate, a study by Timotijevic *et al* (2006), showed how people make sense of precaution by 'drawing upon a wide range of evidence from their understanding of the costs and benefits of the technology'. Research on public perception has revealed that participants view both costs and benefits in very individualist terms. The results of (White *et al,* 2007) suggested that when provided with precautionary advice, participants' displayed both 'comparative optimism' (i.e. users believed that the costs from mobile telephones are greater for others than for the self) and 'comparative utility' (i.e. users believed that the benefits from mobile telephone technology are greater for the self than for others).

Determining 'risk' – when understood as perceived costs versus perceived benefits - is something which is undoubtedly aided by a qualitative approach and qualitative methods. As numerous scholars have noted (e.g. Douglas and Wildavsky, 1982; Slovic, 1987), and as Burgess (2004) has discussed in the context of mobile telephones, a quantitative approach to risk is limited – something which has been discussed in the previous section. A quantitative definition of precaution is difficult in part because perceived benefits can sometimes be difficult to quantify (e.g. how many times mobile telephones were 'life-saving' in an emergency) (Burgess, 2004: 27). In the case of mobile telephones however, it has been suggested that the costs are generally perceived as far more uncertain than the benefits. As Barnett et al (2007: 249) suggest: 'it is arguably a tall order to promote awareness and knowledge of government advice about uncertainty and precaution in a context where for most people the personal benefits of mobile telephone use are considerably more salient than risks and uncertainties'. Of course it is important to stress that whilst the latter is (in many people's eyes) certain (i.e. there are confirmed social benefits to be had from using the technology), the former is comparatively uncertain (as discussed above). This is a theme that will be addressed in Chapter 8.2.

Burgess (2004: 28) also argues that risk perception concerning mobile telephones is an 'individuated' practice driven by individualisation and a breakdown of shared beliefs, institutions and practices. He argues that such individuation fosters a heightened perception of risk. This begs the question of whether precautionary advice would be

interpreted differently in a more 'social' – i.e. less individuated – context. This is something which will be discussed in Chapter 8.2 - where precautionary advice is interpreted and assessed as a deliberative group rather than as a set of isolated individuals

6.2.3. 'Expertise'

The concept of expertise has a long history within STS, dating back to the work of, amongst others, Dorothy Nelkin (1975) (if not further). Brian Wynne (2003) is one of the most prominent advocates of what has been referred to as 'civic epistemology' (cf. Jasanoff, 2003), or 'lay' (e.g. Arksey, 1994), 'indigenous' (Leech, Scoones and Wynne, 2005) or 'popular' (Brown, 1987) 'expertise'. One of the earliest studies of civic/lay/indigenous/popular expertise was Wynne's (1982) analysis of the potential role which the knowledge of Cumbrian sheep farmers could play in the event of a nuclear disaster (like the one at Windscale). Subsequently, a number of empirical studies have been undertaken into the existence of experience-based expertise amongst lay publics, many of which are located within STS (Wynne, 1985; Epstein, 1996) and medical sociology (Faulkner, 2006, Popay and Williams, 1996, Prior, 2003, Williams and Popay, 1994). Accounts such as these allow for an extended conception of expertise and see expertise as something that is contextual and socially constructed rather than ontologically real. As Jasanoff (2003b: 393) argues: 'expertise is not merely something that is in the heads and hands of skilled persons ... but rather that it is something acquired, and deployed, within particular historical, political, and cultural contexts' (see also: Rip, 2003).

In recent years however, the issue of expertise has been revisited by STS scholars, through a renewed focus on what might be seen as the reconstruction of 'expertise'. This has culminated in an as yet unsettled debate between scholars over whether expertise can, or rather should, be treated as being ontologically real. In proposing a 'third wave' of science (and technology) studies, Collins and Evans (2002) have served to intensify this debate. Their project is to propose a normative theoretical framework of expertise (expanded in Collins and Evans, 2007). Collins and Evans, (2002: 237) therefore treat expertise as something which is ontologically real. They argue that, since the 1970s, STS had increasingly opened up the 'black box' of scientific

knowledge, with the implication being that the claim 'trust scientists because they have special access to truth' was now much more difficult to make (Collins and Evans, 2002). For them, the problem - indeed the 'pressing intellectual problem of the age' (and one which they set out to address through their normative theoretical framework) - was 'if it no longer is clear that scientists and technologists have special access to the truth, why should their advice be specially valued?' Collins and Evans (2002, 2007) warn of the 'problem of [over]extension', in which the definition of expertise is broadened or contextualised to such an extent that it no longer has any real meaning. To simply deconstruct expertise without in some way reconstructing it runs the risk of doing away with expertise all together; doing so to the extreme makes it theoretically difficult, if not impossible, to distinguish between different forms of (expert and non-expert) knowledge.

In such a model of expertise, experience is deemed the primary definitional criterion. This is in contrast to the definition of expertise in terms of credentials (e.g. educational qualifications). Randall Collins (1979) has discussed the rise of a 'credential society', one in which an individual's expertise and status within society is valued according to how credentialed they are. This is despite the problems posed by credential inflation and the fact that 'the reasons for going to school are extraneous to whatever goes on in the classroom' (Collins, 1979: 191). In other words, because society demands an individual be credentialed is s/he wishes to be accorded high (expert) status, more and more people are obtaining credentials, which brings the value of those credentials down. It means also that people are obtaining them for the 'wrong' reasons – that is, to improve their employability rather than to learn as such. Collins' (2004) recent work has looked at occupational prestige surveys to suggest that credentials still play an important role in according high social status (to e.g. physicists and doctors), despite there being little real reason as to why this should necessarily be the case. In this sense, to be credentialed is to be credible (as an expert).

Public opinion surveys, such as the *Eurobarometer* suggest that trust in scientists remains high (Gaskell *el al,* 2006: 46-48). The results show that whilst over three quarters of those surveyed believed that medical and university scientists were doing a good job with biotechnology research and practice, only half felt that the government and environmental groups were doing a job in making regulations on biotechnology or

in campaigning against biotechnology. These results of course in part reflect wider public support for biotechnology research. This in itself however suggests that the public trust scientists and scientific institutions. As discussed in Chapter 4, the BSE crisis presented a big threat to the existing scientific advisory system; one which produced radical changes both in the science policy institutions themselves, and in the way in which science policy institutions were viewed by the public. It is important to note however that the erosion of trust was in science policy institutions and not scientists *per se* (cf. Pidgeon, 2009).

The 'bottom-line' question which such debates seek to address however is, 'what is expertise?' Should -or rather *can* - we treat, as do Collins and Evans (2002), expertise as something which is 'real' or should we treat 'expertise', as do Jasanoff (2003b) and Wynne (2003) (amongst others), as a social construct? Can we provide a universal, normative framework of expertise, or is expertise always contextual and open to interpretation? This basic question is addressed by Crease and Selinger (2007:4) in their edited volume on *The Philosophy of Expertise.* They also pose a set of sub-questions which they feel best capture the aspects of academic debate on the issue, including:

> What is the social character of expertise?; to what extent is the reliance on expertise localised in an embodied human subject or distributed in a network of tools and practices?; are there epistemic openings that might make it possible for laypeople to critique expert advice?

This last question in particular relates to one of the aims of this thesis. As we saw in Chapter 3, according to Bohman (1999), one of the purposes of public participation processes (as institutional spaces for deliberation), is both to encourage citizens to make both judgements about the credibility of expert authority as well as the norms of cooperation with experts. In principle, one of the opportunities the Citizens' POLIS provides - as an institutional virtual space for deliberation - is for its participants to challenge expert advice. In questioning the credibility and validity of expert advice, the citizens are able to more fundamentally analyse the very notion of 'expertise' itself; what do they feel qualifies an individual to be seen as an 'expert'? In discussing whether and importantly *why,* they accept or reject various forms of expertise, the citizens can themselves (de)construct 'expertise'. Chapter 8.3 will discuss the example

of Citizens' POLIS on MTRH in order to see whether in practice, the participants' deliberations questioned the credibility of expert advice and in so doing the normative constitution of the concept of 'expertise' itself.

Much work within STS has addressed the basic question of 'what is "expertise"?' predominately from the analyst's perspective. Collins and Evans (2002) as we have seen, have worked to build up a reconstructed, normative framework of expertise, and in so doing have sought to, in their view, reinstate the social scientist's own expertise (see, Evans, 2008). Scholars such as Wynne, Epstein and Jasanoff have worked to extend or 'democratise' expertise. However, despite the fact that multiple, local and contextual (popular/lay/alternative/indigenous) 'expertises' are acknowledged, it is still the analyst who is attributing or conferring expertise (e.g. on sheep farmers or on AIDS activists). It is possible to suggest that the Citizens' POLIS truly democratises expertise as a concept, because it encourages the citizens taking part to define for themselves what they understand by 'expertise'. The Citizens' POLIS then is, in response to Crease and Selinger's (2007) question above, an 'epistemic opening' wherein citizens can challenge existing (re)presentations of expertise and offer their own definitions. For it to be considered a legitimate opening however, it is important that they are presented with balanced information with as little bias as possible (the challenge this presents has been discussed in Chapters 4 and 5).

Turning specifically to the study of expertise in relation to MTRH, there has been relatively little academic attention. Stilgoe's (2005, 2007; Moore and Stilgoe, 2009) research on the issue is an exception. Moore and Stilgoe (2009) offer a comparative discussion of what is seen to be two types of evidence: the 'expert' and the 'anecdotal'. They note: '"Anecdotal evidence" was used in the mobile telephones case to demarcate the boundaries of science. It was situated in a hierarchy of evidence and held to be subordinate to epidemiological and population studies' (Moore and Stilgoe, 2009: 761) (cf: Chapter 5.3.4.). As was discussed in Chapter 4, scientists' 'boundary work' often plays an important role in the cultural categorization and hierarchization of different forms of knowledge (with science at the top of course). Interestingly however, Stilgoe's (Moore and Stilgoe, 2009) study of mobile telephones, risk and health, it was found that:

> ... there was an eventual acceptance of anecdotal evidence as a guide to the investigation of new hypotheses along lines identified by the lay actors. Although clearly skeptical of the scientific plausibility of the anecdotal claims, the experts came to take the anecdotes seriously on grounds that they represented public concerns, and on those pragmatic grounds ought to be acknowledged and addressed through research programs

Stilgoe's research indicates perhaps that, where scientific experts in the areas of nuclear science (Wynne, 1985) or HIV/AIDS research (Epstein, 1996) failed to engage the public with science, scientific experts in mobile telephones, risk and health may have succeeded. That is, scientists in the field of MTRH acknowledged and assimilated 'non-scientific' knowledge. Stilgoe (2007) notes a shift from a 'discourse of compliance' (cf. Stilgoe, 2005) with 'expert' guidelines to a 'style of "public science" in which issues of trust and democracy were intertwined with scientific risk assessment'.

6.2.3. Conclusions

This chapter has provided a summery of the substantive issue of MTRH. It identified four main areas of debate: It was found that regulatory authorities, the mobile telephone industry and some scientists argue that there is little or no scientific evidence to suggest that mobile telephone base stations can cause any harm, whilst on the other hand, anti-mobile telephone mast activists and some scientists, argue that these guidelines are inadequate. It was found also that although there is near-consensus on the issue of short term carcinogenicity, whether mobile telecommunications can harm in the long-term was far more disputed. It was found also that the issue of EHS controversially divided opinion. Whilst some scientists agree with the industry that it is not possible to diagnose people as suffering from an EMF-related impairment or disability, others agree with those whom claim they suffer from EHS that the condition is real. The latter argue that it is physiological whilst the former argue that it is primarily psychological. The chapter also discussed the precautionary principle and the Stewart Report as the main source of regulatory advice on this issue.

This chapter has also provided a discussion of the STS literature and how it has addressed the concepts of risk, precaution and expertise. The chapter also provided a theretical discussion of precaution and the precautionary principle. Specifically on the issue of MTRH, Burgess's (2004) work is prominent. More generally, precaution was

defined as a theoretical concept distinct from uncertainty and uncertainty was itself distinguished from indeterminacy, ignorance and risk. The subject of science, technology and risk has received considerable social scientific attention. The relevant literature has here been reviewed. The importance of lay understandings and the local, 'everday' context and perception of risk is now well-acknowledged. The importance of the media in amplifying the public's perception of risk has also been discussed. Chapter 8 will discuss how 'everyday' lay understandings of risk and precaution compare to and contrast with a group of post-deliberative understandings of a group of citizens whom are informed via a variety of sources. The importance of the media in amplifying the public's perception of risk has been discussed. The chapter also discussed how on the issue of MTRH, research within STS has observed the transition from a 'discourse of compliance' (cf. Stilgoe, 2005) with 'expert' guidelines to a style of 'public science'. More broadly, the epistemic nature of the term expertise was discussed. Recent literature in STS has called for a normative model of expertise (Collins and Evans, 2002) which moves away from the view of 'expertise' as a social construct. In line with argument from previous chapters, this thesis also sees expertise as something that can be treated normatively, and not something which is a social construct. This will be discussed further in Chapter 8.3. The following two chapters will discuss the issue both substantively and theoretically in terms of the issue of MTRH.

Chapter 7: Substantive findings: what were the citizens' views on the 'mobile telephones, risk and health' debate?

The aim of this chapter is to discuss the substantive findings of the Citizens' POLIS. In many respects, this chapter can be thought of as the findings of the Citizens' POLIS as a public participation process *per se*, whereas the following two chapters can be thought of as the findings of the Citizens' POLIS as a research project *on* public participation processes. It will provide a discussion which is partly descriptive and partly analytical of what the citizens' views actually were on the issue of MTRH. The reader should, from the previous chapter, be now fairly familiar with the debate - or at least with its salient features (i.e. its characteristic sub-issues). The aim of Chapter 6.1 was to provide the reader with an overview of the information which was also provided (albeit in more detail) to the citizens in the form of the Citizens' POLIS evidence. As such, it is hoped that that information will have provided the background context that will inform the following discussion of the substantive results of the Citizens' POLIS.

This chapter has been written with multiple audiences in mind. These audiences include, but are not necessarily limited to, interested stakeholders and members of the public as well as academic and other researchers. The chapter begins with a summary report (an 'executive summary' of a sort), which is primarily directed aimed at policymakers and interested stakeholders. As the name suggests, this report condenses the substantive findings as far as possible into those arguments made by the citizen participants which are of most relevance to 'mobile telephones, risk and health' as a policy issue.

Subsequent chapters have different aims, as we will see. Chapter 8 will look at the data from a more critical, sociological perspective, drawing on relevant concepts prominent within the STS literature. Chapter 9 will look at the data to see whether the Citizens' POLIS can be considered an effective participation process, according to certain normative assessment criteria. Compared to Chapters 8 and 9, this chapter might be seen to be less critical and less theoretically-informed. It must be remembered however, that the primary aim of this chapter is to present the citizens' views on the substantive issue to multiple audiences, as straightforwardly as possible. To refer to earlier

discussion (see Chapter 4.1.), whereas Chapters 8 and 9 are more influenced by the analyst's categories, this chapter tries to preserve the actors' categories (i.e. analytic interpretation is comparatively limited vis-a-vis subsequent results chapters).

As discussed earlier (see Chapter 5.6.2.), a pragmatic approach to data analysis was taken. Grounded Theory was used to identify themes in the data using abductive inference; to draw links between ideas, concepts and data – informed by previous research and framed by the research questions. At the end of this iterative process, at the point where the researcher was satisfied he had a useful understanding of the data, nine main themes had been drawn out:: *the state of play; inconclusive conclusions; more pressing concerns; the benefits to society; upsetting the applecart; NIMBY; the role of government – a precautionary approach; the role of government – information provision;* and *research funding.* Each of these themes will be discussed in this chapter in turn. Before doing so however, it is felt that the reader may benefit from a one-page 'executive summary' of the substantive findings.

The summary report was drafted by the researcher, before being submitted to the citizen participants for 'respondent validation' (Bloor, 1978, McKeganey and Bloor, 1981; see Chapter 5.6.1). As argued in Chapter 5.6.1., the purpose of respondent validation is to ensure that participants' views were not misrepresented by the researcher. In this substantive findings section, the focus was specifically on what the citizens themselves said about the issue (in their own words) rather than on the researcher's more theoretical and methodological analysis of their deliberations (see Chapters 8 and 9). Whilst the validity of this thesis as a piece of sociological research relies on the latter, the validity of this thesis as a public participation process relies on the former.

Summary Report of Findings

- ***Level of concern*:** Overall, the citizens were 'not overly concerned' about mobile telephones and in their assessment the evidence did not establish any risk to human health. Two participants claimed they felt more concerned following their participation, whilst three participants claimed they felt less concerned following their participation (the remainder felt as though they were no more or no less concerned).

- ***Uncertain knowledge:*** The citizens felt that the evidence which they discussed on MTRH was too uncertain to make definitive judgements on it. They argued that this evidence did not show for certain that mobile telephones are either safe or harmful, and as a result more evidence is needed to make conclusive decisions.

- ***Precaution as advice:*** The citizens felt that the application of the precautionary principle was appropriate in the context of MTRH. The majority argued that it should remain as a set of optional advice and that any compulsory measures to enforce a precautionary approach (e.g. through legislation/regulation) should not take place. Some participants did however suggest that more should be done to advise the public, e.g. more advisory leaflets, putting 'disclaimers' on mobile telephones to increase awareness of uncertainty

- ***Need for more public information:*** Due to the uncertain knowledge surrounding MTRH, citizens felt that it would be beneficial for the public as a whole to be provided with more information by the relevant government departments/agencies, so that individuals might make better and more informed decisions.

- ***Need for transparency:*** The citizens emphasised the need for transparency in any funding processes related to research. They argued that any [expert] group in charge of allocating research money should remain independent, and that any research taken into consideration must prove its independence from the mobile telecommunications industry.

- ***Need for more research in certain areas:*** The citizens suggested that funding should be made available for future research, which should be prioritised in certain areas over others. The citizens were asked to rank the following sub-areas of the MTRH debate in order of importance: *base stations*; *biological effects*; *cancer* and *electrohypersensitivity*. They were also asked to perform a hypothetical resource 'rationing' exercise, in which they discussed as a group how they would 'spend' £90 million on research into mobile telecommunication technology, risk and health, using the four sub-areas above (in addition to an 'other' category). In the deliberation itself, the citizens were unable to reach agreed amounts or even a single order of importance. However, recourse to taking averages of their individual decisions (taken separately) gave the following order (and amounts): 1. Base stations (£32.5 million) 2. Biological effects (£28.5 million) 3. Cancer (£27.5 million) 4. Electrohypersensitivity (£1 million) 5. Other (£0.5 million).

- ***Sources of funding:*** The citizens suggested that the responsibility for future funding should [continue to] be shared between government and the mobile telecommunications industry.

7.2. Detailed discussion of the citizens' findings

7.2.1. The 'state of play': citizens' assessments of the evidence

Overall, the participants expressed a lack of concern for the possible risks to health posed by mobile telephone use. Some were quite unambiguous in their expressions:

> <littlered> I am not concerned about them
>
> <Evefant> I'm not worried about my health
>
> <thfc1> I think mobiles are harmless

Some of these statements were however qualified, with participants emphasising that this was an assessment based on their current understanding of the subject, in relation to their current knowledge of that evidence which is presently available:

> <Evefant> judging from the evidence we have now
>
> <lovecraft> not at all on current state of play

Other participants were more tentative about the possibility of making a definite statement as to whether they were concerned or not:

> <cookiemonster2> well, u cant [sic] ever know for sure... but from the evidence you've given us, no.

cookiemonster's assessment is interesting since it suggests an appreciation of the fundamental inconclusiveness of any issue related to knowledge of the safety of a scientific or technological artefact, and maybe even broader still, of knowledge of science and technology *per se*. Of course one does not need to have read Karl Popper (1959) to appreciate the basics of the problem of induction. In emphasising that their assessments are based on the 'current state of play' (in regard to available evidence) the participants do not appear to wish for their decisions to be binding or final. By being tentative in their discourse, the participants are leaving room for new evidence to be considered in the future which might change 'the state of play' and therefore their views and decisions. It might be suggested that this tentativeness is borne of two things. Firstly, it is a product of a sophisticated analytical approach to a seemingly

straightforward question. Secondly, it is a discursive means through which participants can be protected from possible future evidence which might otherwise serve to 'disprove' their initial assessments:

> <Dexter the Blade> Because we are not sure that there isn't a risk ... if there is a risk and we don't believe them ... then we are horribly in the wrong

Dexter displays an awareness that any judgments made now could have repercussions in the future, provided that future evidence suggests either way that mobile telephones do, or do not, pose a significant risk. It is suggested that to make judgements which are based on anything other than established current knowledge is to make a decision which is not only based on uncertain evidence, but is a decision which can be proven to be morally 'wrong'. His comment was made during the discussion of electrohypersensitivity and in regard to those electrosensitives who claim to suffer symptoms as a result of exposure to EMFs. In claiming that their assessment (of mobile telephones *not* being a cause for concern) rests on current evidence only, any future evidence which might suggest otherwise (i.e. that there is a cause for concern) cannot be used to suggest that the participants were 'wrong'. In this respect their views occupy a more moderate middle-ground, which in terms of the (*Figure 3,* Chapter 5) could be seen as in line with those stakeholders in category 3 (*Mobile telephones doubtfully pose some risk*). Their views contrast with those stakeholders at the extremes of the debate, who either stand to be proven right or wrong, should future evidence weigh one way or the other - i.e. to suggest beyond 'reasonable doubt' that the use of mobile telephones do or do not produce adverse effects on health.

7.2.2. 'Inconclusive conclusions': Identifying levels of uncertainty

Despite the citizens generally claiming that they were 'not overly concerned' by the possible risk to health of mobile telephone use, they did emphasise that this claim was based on uncertain knowledge. They were keen to emphasise that any assessment which they made was not only based on current knowledge (see previous section) but also that this current knowledge was characteristically *uncertain.* As discussed above, the participants' displayed a critical awareness that future knowledge has the potential to contend or amend present knowledge, thereby rendering the latter potentially

uncertain. As the following passage of deliberation suggests however, in the specific case of mobile telephones, they argue that present knowledge is *also* uncertain *per se*. So it was not simply a case that participants were reluctant to draw firm conclusions based on the fact that future knowledge might contend or amend those conclusions, but also, it was the case that participants believed they were *unable* to draw firm conclusions from the current evidence. Interestingly, the participants argued that their own conclusions must therefore be to a degree inconclusive, in reflection of the evidence which they felt was also inconclusive.

> <Dexter the Blade> If you don't take all of the facts at face value, then possibly generally they are put where they will get most use from them - ie in densely populated areas
>
> <cookiemonster> but some evidence may be better than others... less debatable?
>
> <thfc1> true
>
> <Spike> so have we drawn any actual conclusions? Or is our conclusion that the evidence is inconclusive?
>
> <lovecraft> I think we always knew that cookie!
>
> <Spike> true
>
> <cookiemonster> I would think its inconclusive from what we've said!
>
> <Evefant> yeah, I do
>
> <thfc1> more evidence is needed
>
> <Evefant> it's really important to be critical against everything, but still, you have to take a stand, even if you don't have enough evidence

Of course, as will be discussed below (see Chapter 8.2.) the rationale of a public participation exercise is its role as a type of 'extended peer review' (Funtowitcz and Ravetz, 1993) to deal with issues which are scientifically uncertain (or post-normal).

The citizens acknowledge and accept the scientific uncertainty. As Evefant concludes hoever, despite the existence of inconclusive findings, it is necessary to be critical of that information which we do have at our disposal and to 'take a stand'; to make the best decisions we can at the time given the evidence. This assessment sums up the very purpose of a pragmatic participation process, where citizens' make normative judgements on what society ought to do about a given issue. In the absence of scientific certainty.

Despite their acknowledgement that current evidence was uncertain, the participants did place this uncertainty back in its temporal context, by arguing that just as time can help to create uncertainty (by producing new knowledge which contests existing knowledge for example), time can also help to reduce uncertainty. In this case, it was suggested that new knowledge could help to persuade the participants that they should be concerned over the issue of MTRH (in contrast to their current feeling of not being overly concerned).

> <thfc1> something could come out in years to come but who knows ... only time will tell
>
> <Dexter the Blade> Because we are not sure that there isn't a risk
>
> <thfc1> i reckon and this is my opinion but we need at least ten years or more just to see if a mobile can harm us or not
>
> <cookiemonster2> maybe one day we will [see adverse effects] with mobile phones, but until then, no -nothing will be done I think

This line of inquiry was, in general, tied to their discussion of that evidence which discussed long-term use of mobile telephones and long-term exposure to EMFs. As such, the participants' deliberations also treated the issue of uncertainty in a more substantive sense – that is, they displayed an understanding that potential risks of a 'new' technology might only become apparent *after* the technology has been established in society for a certain length of time.

As such we see there to be two levels of uncertainty in the participants' deliberations: epistemic and substantive. The former relates to their argument that future knowledge has the potential to render conclusions based on present knowledge *less* stable (more

uncertain), whilst the latter relates to their more specific argument that in the case of MTRH, future knowledge also has the potential to render present knowledge (which is already uncertain) *more* stable - i.e. less uncertain.

7.2.3. 'More pressing concerns': mobile telephone risks as a less serious risk

Just as it was suggested that any discussion of the possible risks to health of mobile telephone use cannot take place without regard for their entrenched use within society, so too was it suggested that such a discussion cannot take place without regard for its relation to other societal risks. A prevalent theme within the deliberation was that there are 'more pressing concerns' than those related to MTRH.

This line of inquiry followed the opening question in the third deliberation session, on the issue of cancer, which asked participants whether they felt mobile telephones did pose a risk to health, specifically in regard to possible carcinogenicity. Participants did not answer straightforwardly and instead sought to assess the level of risk which they felt mobile telephone use posed, by comparing it to other risks which they felt were more established:

> <alanne> no, there are other more serious known risks to be dealing with i.e. sunbeds and I can't stop my (big) kids using those
>
> <littlered> I don't take it as seriously as ingested carcinogenics [*sic*]

As with the last section [*entrenched use of technology*] the participants critically problematised the apparently simple question of whether they felt mobile telephones posed a risk health (in this instance in regard to possible carcinogenicity). They voluntarily expanded the question to make it more complex and also to make it more contextual. In justifying their (comparative) lack of concern, the participants referred to the intangibility of mobile telephone-related risk:

> <lovecraft> too many other more tangible things to worry about...

littlered and *lovecraft* both suggest (the latter in more general terms than the former) that part of the problem with mobile telephones is that it is difficult to be concerned

with something we cannot see or feel. There is also reference to the scientific uncertainty which surrounds the issue of MTRH (see Chapter 7.2.2). Participants' discourse suggests a latent feeling, not so much of 'what we don't know can't hurt us' but rather of 'what we don't know can – or rather might - hurt us is not worth worrying about when we have other things to worry about which we *do* know can hurt us'. As was suggested by another participant:

> <cookiemonster> yea, there are more immediate things to worry about

The use of the term 'immediate' is significant, as it refers in particular to the intangibility of mobile-telephone-related risk in the long-term. When asked as to what these more immediate and more tangible problems were, participants offered some surprising responses:

> <lovecraft> job, finances, other domestic issues
>
> <littlered> On a day to day basis are you more effected by worries about cancer or a dodgy phone signal?

In this line of inquiry the participants did not deny that mobile telephones did or could pose a risk to health, but any risk which they might pose is of low priority compared to the exigencies of everyday life, such as those risks related to one's job and finances or even those concerns about mobile telephones which are not health-related (e.g. 'dodgy phone signal'). *littlered*'s provocative question also ties in with discussions of the utility of mobile telephones (as will be discussed in the next section). Science and technology are of course deeply integrated into, or implicated in, many of the things we do on a daily basis, yet those issues which we concern ourselves are not always reducible to science and technology and this is something which any deliberative process on science and technology must take into consideration.

The participants therefore concluded that because, in their view, there were so many other risks. Risks from using mobile telecommunications risk, like the EMFs they function on, are intangible. Although they do imply that mobile phones pose some risk, for them it is comparatively minor compared to a range of other risks we encounter in everyday life. This section has simply presented, in summary form, what the citizens

said about risk, in their own words. What they said about risk will be subject to more analytical and critical analysis in Chapter 8.1.

7.2.4. The 'benefits to society?': The utility of mobile telecommunication technology

As well as situating their discussion about the possible risks of mobile telephones in relation to other risks (which were perceived as greater and more established risks), the participants also situated their discussion in relation to the perceived utility of the technology. The issue of 'what (if any) were the benefits to society of mobile telephones' was a prominent one, and one on which the participants were divided:

> <cookiemonster> but what is the benefit to society?
>
> <Dexter the Blade> well ... communication
>
> <cookiemonster> why do we need to be constantly contactable?
>
> <Dexter the Blade> it helps in thousands of situations ... i.e. calling an ambulance when you're not at home
>
> <Evefant> I agree, maybe we would have more casualties without the phones, since people couldn't call for ambulances or help when in need
>
> <cookiemonster> but there are always landlines around generally .
>
> <Evefant> if you're lost in a Swedish forest you really need a phone...
>
> <Dexter the Blade> I'm pretty sure more people get saved from death by calling from mobile phones for ambulances, than people die directly from mobile phone radiation
>
> <cookiemonster> I just don't [*sic*] agree that their benefits to society are that overwhelming
>
> <littlered> I agree

The participants were split as to whether they felt mobile telephones actually provided necessary, or in their words, 'overwhelming' benefits to society. The question is important, since it avoids treating risk or 'riskiness' as an isolated concept. The question as they saw it is not whether mobile telephones are risky *per se*, but whether any risks that it might be proven to pose are outweighed by the benefits which they also

offer. They explicitly noted how any assessment of a technology must take both risks and benefits into consideration – and it is this which forms the basis of any decision, personal or societal, on whether that technology should be used (or rather to what extent it should be used):

> <Dexter the Blade> I guess you have to look at it that way ... pros, cons, decision

In light of this discussion, the participants' actively reconstructed the fundamental question given to them by the researcher, namely 'do you think mobile telecommunication technology poses a risk to human health?' Their new, broader question read something like: 'do you think mobile telephones pose a risk to human health which is significant in relation to its benefits to society?' Interestingly, what emerged from this was the suggestion that discussion of any benefits, and possibly even the discussion of any risks, might be somewhat of a moot point, given that mobile telecommunication technology is already so entrenched within society as a whole. Despite being relatively 'new', it was suggested that, unless there was irrefutable evidence to suggest extreme adverse effects, it may not be possible to 'remove' the technology from society, because of the convenience it affords.

> <Evefant> what if you need your phone at work, like to work when you're travelling? That might be essential, making money is essential to many people
>
> <littlered> its [*sic*] a convenience that would be impossible to take away now though

Such views suggest an awareness of the effect (if not necessarily the benefit) mobile telephones have had on society. As with many technological developments, the mobile telephone has afforded greater convenience and its introduction and uptake has led to certain ways in which social relations and processes have reorganised themselves accordingly. Although some participants disputed whether such re-organisation was a 'good thing' (i.e. beneficial to society) it was generally acknowledged that the ways in which we communicate, as well as the ways in which we interact in terms of economy and employment, have undergone what was seen to be irreversible transformation. This will be explored more in the following section.

7.2.5. 'Upsetting the applecart': The entrenched use of mobile telephones

The participants also argued that it was important to bear in mind how entrenched the use of mobile telephones was in society. It was felt that any discussion of possible adverse effects on health, and any related discussion over what might be done in the event that mobile telephones were to be found to have adverse effects on health, must also take into consideration the possible intractability of the technology. Whereas in many cases in which the risk to health of a given (S&T) artefact could become established, the possibility of either removing that artefact from society or regulating its use within society accordingly might not prove to be too problematic. It was felt however, that with mobile telephones, their ubiquity and their perceived utility might act as obstacles to the imposition of new regulation and certainly to any proposals to remove them from society.

This line of inquiry was prompted by one participant's response to a question posed by the moderator which asked: 'if it was found that there *were* significant risks to health [taking into consideration that what is to be understood by the term 'risk' had been previously discussed], would this change whether and how you use your [mobile] telephone?'

> <lovecraft> mobile technology has been with us so long that it would take some really strong research to *upset the applecart* [emphasis added].

The use of the term 'upset the applecart' is interesting since it entails the implicit assumption that the development and expansion of mobile telecommunications is a 'good thing'. Generally, when one 'upsets the applecart' he or she is 'disrupting' or 'spoiling' another person's (or persons') plans. *Prima facie,* it might seem that the participant is tacitly acknowledging their support of the development and expansion of mobile telecommunications, and that any research casting doubt on the safety of the technology would come as a disappointment to them. However, looking at *lovecraft*'s assertion in relation to his other comments, we might instead infer a hint of sarcasm. For instance, in the same discussion, he claimed that:

<lovecraft> I'd love to give it up - I hate the thing!!

This statement is also interesting, because it suggests a certain amount of ineluctability. In making it, *lovecraft* appears to be relinquishing agency in regard to his mobile telephone use. Despite wanting (indeed 'loving') to give it up, *lovecraft* implies that he is unable to. One might infer that the societal use of (and reliance on) mobile telephones has become such, that those individuals who might not want to use them are almost socio-culturally obliged to rely on them, and have therefore had agency - in terms of having the ability to *choose* whether or not to use mobile telephones - taken away from them. He, along with another participant, did feel that he was not alone and suggested that, even in the presence of more convincing evidence that mobile telephones did pose a risk to health, many people would be unable to give up what is inferred as being an addiction to their mobile telephones:

<lovecraft> it may not stop many to be honest - many could not give it up

<alanne> I think some people do seem to be addicted to phones, especially youngsters

Although some participants spoke of mobile telephone use in terms of addiction, even likening use of the technology to other behaviours perceived to be addictive (e.g. smoking and alcohol abuse), others suggested that their 'dependence' on the mobile telephone was entirely conscious and that they have a 'right' to this dependence:

<littlered> No-one is taking my phone away ... it's my lifeline!

The term 'lifeline' of course was being used in a colloquial and hyperbolic manner. In this sense, the mobile telephone was seen to offer a 'social lifeline'. The commonality between *lovecraft*'s and *littlered*'s views was that they both cannot do without their phone, and one which problematises the notion that one might simply stop using their mobile telephone if risks were to become ascertained in the future. Although the participants were referring, in the first instance, to their own personal use of mobile telephones, they also suggested that these views might be reflective of wider societal views.

<Dexter the Blade> No-one is willing to part with mobiles now

<littlered> we'd accept as a public that there was a risk and that it was "out of our hands"

littlered's statement is interesting in that again, there is the argument that the perceived utility of mobile telephones means that even if certain risks were established, they would be considered 'acceptable' risks. When discussing the hypothetical prospect of having to 'give up' mobile telephones, there was an evident sense of prospective 'loss'. Participants' deliberations also imply the 'everydayness' of mobile telephone use, the fact that it is intimately woven into the fabric of their society. They suggested that 'losing' the capacity to use mobile telephone would be like losing the capacity to make use of other everyday facilities or artefacts, or more extreme still, that it would be like losing part of themselves!

<Evefant> [it would be] like for us to give up showers or TV or whatever

<lovecraft> many people would feel like an amputee without it ... it is so ingrained in the culture

There is then, an evident cultural normativity of mobile telephone use, of which the participants were fully aware:

<Evefant> a girl in my class didn't have a cell phone, my class consists of ppl [people] 19-40, and everyone reacted really strongly on that

Due to the vast majority of people (in those countries where they are generally affordable of course) having mobile telephones, non-use is seen to deviate from the norm. Evefant's contribution is an attempt to quantify the full extent of the entrenched nature of mobile telephone use. In summary, this line of inquiry is important, because it shows the participants to be constructing a framework within which subsequent discussion over what *should* be done in terms of mobile telephones and risk must be tempered by recourse to what *can* be done given the perceived intractability of the societal use of mobile telecommunication technology. When responding to a fellow participant's hypothetical scenario in which mobile telephones use was to be severely restricted, one participant provocatively concluded that the only way in which this could become a reality was by relinquishing democracy *per se:*

<lovecraft> we would need some kind of dictatorship for such measures to be taken now alanne - the horse has long bolted.

7.2.6. NIMBY

Despite claiming to be 'not overly concerned' by MTRH, there was a recurrent argument within the deliberation which suggested that participants were not entirely comfortable with it. The term NIMBY, and the concept for which it stands, are now fairly established. The acronym stands for 'Not in My Backyard' and represents any form of opposition, in principle as well as in practice, 'to the location of something considered undesirable in one's back yard' (Merriam-Webster, 2009). The term is sometimes, although not necessarily, used pejoratively, and is distinguished from other forms of opposition (e.g. NIABY – Not in Anyone's Back Yard) to the siting or erection of something which is to be considered generally undesirable *per se.* In this case, NIMBY is basically residential opposition to the erection of a mobile telephone mast in (or rather near to) one's back garden and not opposition to the erection of mobile telephone masts *per se.* A few participants were candid about the fact that although they had previously suggested that they didn't feel overly concerned, and did not see there to be established risks, they still claimed that they would either be unsure (in *Dexter*'s case) or unhappy (in *littlered's* case) were a mast to be erected near to their homes:

<Dexter the Blade> The only things that keeps niggling me is that I'm not sure how I would feel if there was one right in my back garden

<littlered> ... as long as it weren't [sic] in my garden ...

Another participant, one whom was aware of the 'NIMBY effect' , added to this argument by suggesting that it would be no doubt possible to find more research claiming that mobile telephone mast emissions did have adverse effects on health, *if* a mast were to be proposed in his locality.

> <Spike> that is a good question moderator- it is the NIMBY effect - (Not In My BackYard)? I think I would probably be able to find a lot more research against masts if there was actually one near me.

This is an interesting argument, for two reasons. Firstly, it suggests that *Spike* is somewhat sceptical about scientific research and alludes to the fact that 'science' can be 'used' for certain purposes and to fulfil certain (political) agendas (thereby challenging the monolithic 'Science as Truth' model). Secondly, it implies that he believes that activists – e.g. NIMBY protagonists - are adept at utilising scientific research in order to support their position. It is important to note however, that *Spike* does not imply that the research used in such instances is 'wrong' or even spurious, but rather that it is simply possible to find research to support a given, preconceived position (in this case, opposition to the erection of a mast in the nearby vicinity of one's home). As will be discussed below (Chapter 7.2.8.), the participants were also sceptical over research used by the mobile telecommunications industry for the same reason – i.e. that its use could be in order to support a preconceived position (i.e. that mobile telephone masts do not have adverse effects on health and, as a prevalent and profitable technology, their siting should not in principle be opposed). Putting these two arguments together, we might suggest that such claims reveal that some participants were of the opinion that there are (at least) two sides to every story, and that science can be used as a resource in supporting these two (or more) sides.

Despite their NIMBY sympathies, the participants sought to justify their argument more in terms of the adverse 'aesthetic', rather than adverse health, effects of mobile telephone masts:

> <littlered> because they're unsightly ... that's why I wouldn't want to live by one

> <alanne> Not into the Nimby syndrome but I guess from an aesthetic point of view I would choose to buy where there was not a mast

The implications here are that local authorities should take into account viewpoints of local residents – both the actual viewpoints of existing residents and also the hypothetical viewpoints of potential residents (as expressed here) – when making decisions as to where to site a new mobile telephone mast. However, from the

participants' deliberations it appears as though those reasons which are of primary concern are more aesthetic than health-related.

7.2.7. The role of government: encouraging a precautionary approach

The participants were asked to discuss whether they felt the precautionary approach was a satisfactory government response to the issue of MTRH. What the participants understood by 'precaution' as a general concept will be discussed in Chapter 8.2.
For the time being, our focus is on substantive understandings of a 'precautionary approach' as applied to the role of government in MTRH.

One participant opened this line of inquiry by arguing that precautions were necessary. This prompted fellow citizens to explore question as to how much precaution should be taken in the case of MTRH:

> <alanne> there is too much now, back to basics we have to take precautions
>
> <thfc1> some precaution yes alanne ... but how much?
>
> <Evefant> what precautions do you think we should take?

In response to this question, fellow citizens suggested specific ways in which precaution could be put into practice:

> <lovecraft> essential calls only, more hands free, limit children's access, zones around masts
>
> <lovecraft> emergency calls, calls where no other phone is available, limited duration of calls
>
> <alanne> previously with Stewart report, just to use commonsense anyway re children, amount of exposure, advice etc

It appears as though the Stewart Report was influential in the formulation of these suggestions, since the Report (whose executive summary the participants had read) also recommended making essential calls only, limiting children's use and using hands free devices wherever possible (etc). *Alanne* specifically cites this Report as the source from

which her interpretation of the precautionary principle has derived. The other participants do not however, and as *alanne* also suggests, a precautionary approach to MTRH simply entails using one's common sense.

Some participants however problematised this straightforward interpretation of a precautionary approach to MTRH:

> <Dexter the Blade> Essential calls only? How do you decide that?
>
> <moderator> who do you think should decide – is it down to the individual himself/herself?
>
> <Dexter the Blade> possibly moderator.

Of course to suggest that something is 'common sense' is to imply that it is normative within a particular social or cultural environment or group. As such, any argument that those features which constitute a precautionary approach to the use of mobile telephones (such as only making 'essential' calls) are to be understood as being (relative to the) individual, cannot at the same time be understood as 'common'. The participants did conceive of 'common sense' as being a source of normative guidance which individuals should follow when making choices concerning whether and to what extent to use mobile telephones. However, their subsequent deliberations suggest that they felt that common sense should not necessarily be dogmatic or binding – and were quick to emphasise the individual's freedom in choosing whether or not to follow this common sense. In other words, they did not deny that the individual would be well-advised to follow precautionary advice (understood according to the characteristics outlined above), but they were keen to note that the individual should not be bound by such advice. Their attention thus turned to discussing the extent to which an individual should be in control of their own precautionary approach and to what extent the government should intervene in 'enforcing' a precautionary approach. In their deliberations, the question 'is the precautionary principle satisfactory', was actively reconstituted as a discussion of *to what extent should the government actively regulate the issue of mobile telecommunication technology, risk and health*?

Participants were quick to defend the activity of mobile telephone use as being an individual liberty. When asked whether the government could or should have more direct involvement in regulating access to the technology (for example by limiting coverage, increasing costs etc), most participants were strongly opposed to the idea:

> <Dexter the Blade> I don't know if the government could restrict access
>
> <Evefant> i think it [restricting access/use] sounds pretty fascist
>
> <lovecraft> yeah, it smacks of nanny state etc

Of course, most participants (as discussed above) had stated that they were not overly concerned about the issue, and did not feel that there was conclusive evidence, and this might have arguably influenced the citizens' views as to whether intervention was justifiable in this instance. One participant did suggest that government intervention in the access to and use of mobile telephones *would* be justifiable, but *only* in the event of any adverse health effects being well-established. Others however argued that government non-intervention should be unconditional:

> <moderator> could or should the government be allowed to restrict and regulate mobile telecommunication technology use now?
>
> <Dexter the Blade> If there is a definite health risk – yes
>
> <thfc1> no way!

In cases such as this, where there is significant scientific uncertainty, it was seen to be inappropriate for government to play an overly interventionist role.

In discussing the role of government, the citizens also took it upon themselves to discuss whether or not they trusted government:

> <thfc1> who here trusts the government?

The responses to this very direct question were mixed. *thfc1* answered his own question by suggesting that the government were not to be trusted because, in his opinion, they did not follow through on their word:

<thfc1> I don't - they never do what they say

However, the other participants who contributed to this line of inquiry were more positive about the trustworthiness of the government:

<Evefant> I trust them, but I think it's always hard as a civilian to find out what they're doing

<Spike> well I don't think they do provide us with enough info, but I do trust that if there is a problem they will act within our interests

<cookiemonster1> I think we can ... they should give awareness as to possible risks, but leave it for people to decide.

There was a recurrent argument within the deliberation that government *could* be trusted in terms of the ways in which they were providing information, but that the amount of information they were making available to the public was less than satisfactory. This passage of deliberation had stemmed from a specific discussion of MTRH, although participants framed the discussion in more general terms, and not necessarily in relation to this specific issue. The above statements are interesting therefore because they run contrary to accounts which find low trust in government on issues related to science policy (Jasanoff, 1997; Millstone and van Zwanenberg, 2000; Macoubrie, 2006) *Evefant, Spike* and *cookiemonster* all felt as though they could trust government, with *Spike* claiming also that he feels government does generally act in the public interest. It is worth pointing out that both the Swedish participants (*Evefant* and *cookiemonster*) felt their government was trustworthy, whilst from the UK participants, only *Spike* felt sufficiently motivated to express a trust in the UK government. However, only *thfc1* expressed any distrust in the UK government.

The above views are interesting for two other reasons. Firstly, this passage of deliberation shows that, in the case of mobile telephones, government are seen to be responsible for enabling individuals to make decisions of their own. As *cookiemonster* suggests, it is up to people to decide for themselves, but in order for them to do so, government should provide them with an 'awareness' of possible risks. Other participants agreed:

<alanne> I guess each individual should be deciding what they personally need to know

Secondly, as *Evefant* suggests, trust is not unconditional and in order for it to be maintained there is a need for government to be open about what it is are doing on a certain issue. It is implied that not having access to such information might threaten the trust which people have invested in their government. The role of transparency will be discussed later in this chapter (see Chapter 7.2.8). The next section however will look in more detail at how the citizens thought government could actually enable individuals to make decisions of their own. An important responsibility of government, according to the citizens then, is in the general provision of information upon which individual choices (of for example, whether and to what extent to use a technology) can be made.

7.2.8. The role of government: information provision

<alanne> the non-sharing of info is perhaps more scary than the technology itself

As the above comment from *alanne* suggests, the participants suggested that one of the main risks echoed in S&T public policy debates might not be from any possible (adverse) effects of the technology *per se,* but rather from the public being given access to information which might help them to understand those possible (adverse) effects. As *cookiemonster* suggested above (see section 6), it is up to people to decide for themselves whether and how much they use the technology. As *Spike* suggested (see section 6) however, some participants were dissatisfied with the amount of information that was currently made available by government. *Spike* was not here specifically referring to the issue of MTRH, but rather to what he saw as being the role of government in general. The participants did however also discuss this information provision role in the specific context of MTRH. They discussed possible measures through which government could provide public information:

<lovecraft> public information films, school visits from white coated boffins?

<thfc1> they could issue a video/dvd documentary for kids at school

lovecraft identifies a need to engage certain publics – e.g. school children – with science. In using the term 'white coated boffins', he implies that scientists can appear too 'removed' from public environments, and there is a need for them to directly engage with these publics, and not necessarily rely on mediating sources of information (although as will be discussed in Chapter 8.3. it was also argued that their credibility as experts relies on this 'otherness'). That said, both *lovecraft* and *thfc1* both note the potential value of mass media such as films and documentaries in informing members of the public. It is worth noting that both these participants also emphasise the importance of providing information specifically to school children. The citizens did note that in terms of providing information, children should be paid particular attention. This stemmed from their discussion about children and the fact that they would be the first generation to 'grow up' using mobile telephones, and that they were therefore the most-likely to suffer from any possible long-term adverse health effects:

> <moderator> ... so perhaps this ties in with long-term use - as kids will be the first generation who have been using it for most of their lives- should we regulate their use?

Initially, participants seemed to suggest that children, like adults, should be allowed to make decisions themselves, albeit decisions 'encouraged' via information being provided to them:

> <lovecraft> ... encourage them but impossible to enforce
>
> <cookiemonster2> maybe just make it aware? like eating healthy [*sic*]?

However, the deliberation then swayed in favour of the argument that children were different, and that as such, advice and information alone might not be successful:

> <alanne> they would take absolutely no notice at all, the only answer would be to limit access to the phone you have provided
>
> <thfc1> I think we should [regulate children's use] mod[erator].
>
> <lovecraft> like put a limit on minutes?
>
> <cookiemonster2> or get them pay as u go, and when their minutes are up, they cant [*sic*] use it anymore ☺ ... that limits it

<lovecraft> till the next period of minutes begins....

The participants concluded therefore that it was acceptable to regulate children's use of mobile telephones, but that this responsibility lay with parents rather than government. It is worth noting also that a couple of the participants (*alanne* and *thfc1*) had children, and so they spoke of explicitly of their personal interest in the monitoring of children's use:

> <thfc1> my eldest is 12 and he wanted a mobile from the AGE OF 8 and I said nó he had to wait till he was 11 [*sic*]. I am wicked lol [laughs out loud].

Views like these suggest therefore, that in relation to children's use of mobile telephones, personal implementation of precautionary approach *in practice* overrides personal attitudes towards mobile telecommunication technology, risk and health in general. In other words, despite participants being not overly concerned' by mobile telecommunication technology and its relation to risk and human health, the fact that they acknowledge at the same time, that there is significant uncertainty surrounding the issue (particularly with regards long-term use) prompts them to act precautionarily in certain respects (i.e. in monitoring children's use) despite this general lack of concern. This then can be considered a typical application of a precautionary approach (according to its original, official definitions) as being a way of protecting oneself against possible risks despite a conviction that such risks do exist presently.

With the argument that it is an individual's choice as to whether and to what extent they make use of mobile telephones greed upon, one participant suggested that the question be rephrased to address what she thought was the crux of the matter:

> <alanne> I still think it is protection and safer development that is the issue not restricting personal freedom

Although most of her fellow participants were outright opposed to *any* intervention from government in terms of regulation, *alanne* offered a different interpretation, by arguing that even though restricting choice is a threat to individual liberties, in certain instances, limiting choice in the first interest could act in the best interests of society as a whole:

> <alanne> you can't limit choice as to what is available and police it but you can make safer ... I don't like big brother but some things are a massive social and cost risk to society as a whole, so try to avoid giving individuals the choice ...

She also refers specifically to the issue of MTRH:

> <alanne> I'm not one for regulation but in this case it is time for regs [regulations] re [with regard to] phones and masts not advice and recommend [*sic*]

Here, *alanne* suggests that in certain cases, the responsibility of the government can extend beyond simply the provision of advice, although again it should be noted that this view differed to the views of the other citizens, who emphasised informed personal choice:

> <lovecraft> then maybe the best you can offer adult population is a disclaimer about the possible dangers - after that it is up to them...

7.2.9. Research funding: transparency and trust

What might also be seen as a dimension of the provision of public information is ensuring public accountability and public *transparency*. The participants also discussed the issue of *trust*, specifically in regard to the relationship the mobile telecommunication industry has with research into the possible effects on health of that technology. During a discussion in which the participants began discussing the relationship between the industry and research, the participants discussed whether they were concerned that the former exerted an (undue and untoward) influence over the latter:

> <thfc1> i think they [the industry] have some influence ... or they may bend the truth
>
> <Spike> i think they do have influence - as mentioned in our evidence
>
> <thfc1> a business will always have there [sic] own interests at heart
>
> <alanne> but we need their money and also their co-operation with any findings

This passage of deliberation highlights the tension that exists between industry and research in areas of applied and policy-useful research in general and not only as related to mobile telephones, risk and health. The participants reveal their concern that, in this case, mobile telephone companies can exert an influence on the way in which research is conducted - or rather the ways in which research is *presented. thfc1* suggests that this influence might manifest itself through the presentation of the research results to a (public) audience. He adds also that businesses will always have their own interests at heart, thereby being a necessary opponent to any aspirations of a 'disinterested' science as applied to public issues, such as mobile telephones, risk and health. *Alanne* offers a counterpoint in noting that whilst this may be the case, the industry is also a necessary ally. Whilst she does not dispute that the presence of the mobile telecommunications industry in the research process poses a threat to it, she also argues that they play an indispensable role both in funding research and in complying with the findings of that research. Of course, this statement sums up the very essence of the tension of their role; that it, their involvement in the production of research (i.e. through funding) is seen to be odds with their involvement in the implementation of research findings (i.e. in making or not making changes to the technology based on those findings). Following this passage of deliberation, *Spike* returned to an earlier argument of his (see section 6, above), where he suggested that science and scientists can be 'used' by protagonists on both sides of the debate in order to advance their particular side:

> <Spike> Then scientists are often funded by companies that might lie either side of the debate.

Just as he had noted previously that science can be a resource for those on the 'side' which opposes mobile telecommunication technology (or at least the siting of mast's 'in my back yard'), so too can it be a resource for mobile telecommunication companies who seek to substantiate their position that mobile telecommunication technology is safe. In their scepticism on the trustworthiness of the mobile telecommunications industry in this debate, the participants highlighted the other side of the coin so-to-speak in regard to the latter's role in funding research. Just as their capital is a reason why they are needed - as suggested by *alanne* above - it is also the very same reason for why they cannot be trusted:

<lovecraft> there is so much money in the business companies cannot be trusted, govt [government]

<thfc1> all companys lie dont they?

<lovecraft> bit of a blanket statement but maybe....

<thfc1> from the companies they are researching ... everyone works for someone

As arch-sceptics of the group, *lovecraft* and *thfc1* perhaps exhibited less trust than the group as a whole, but unlike with the discussion of the role of government, there were no participants who took it upon themselves to defend or support the position of the industry in the debate. Faced with this dilemma (i.e. we need them, but can we trust them?), the participants then engaged in a discussion on *who should* fund research, *how* it *should* be funded and how *should* the funding processes be made visible to the public.

Interestingly, a couple of participants went as far as suggesting that the actors involved in funding the research are more important than the actors involved in performing the research:

<alanne> Yes Spike it's who provides the funding which is more important than who does the research

Such an argument relates back to the 'science as resource' argument which the participants discussed earlier. Science, as a costly activity, relies on external funding sources (as it can scarcely be funded by the scientists themselves), and - in the eye's of *alanne* and the other participants – such a reliance could be affected by the interests of those funding that research. As such, the role of an 'independent' funding source – one which is both genuinely independent and publicly demonstrably independent – is paramount:

<moderator> Who do you think should provide funding then?

<alanne> anyone without a vested interest

<cookiemonster> some kind of neutral funding

Some participants were however sceptical as to whether it is possible to be demonstrably independent and indeed, more fundamentally, whether true 'independence' exists:

> <lovecraft> is there such a thing?
>
> <cookiemonster> probably not.

Based on the idea that independence is problematic, the participants moved to an argument which instead settled on the idea of responsibility. In their opinion, it was the industry that should be responsible for research into the safety of their products:

> <thfc1> the phone companies should pay
>
> <Dexter the Blade> yes, I think it should come from the companies themselves
>
> <alanne> as the vast profits are being made by the industry so they should be responsible for paying part

At the same time, the participants were opposed to the idea of government funding, due to the association with it being public money (i.e. derived from public taxes):

> <Dexter the Blade> and I doubt the average joe would be particularly happy about being taxed more, especially for research which may be inconclusive anyway
>
> <Spike> I agree that definitely any tax rise people would not be happy with

It was however noted, that the funding from companies would of course be indirectly taken from consumer investments (i.e. from people buying and using the technology):

> <thfc1> but the money from the companies is the money we pay them

The participants then concluded with an interesting proposition to the problems encountered when trying to decide from where funding should come. *Dexter* best summarised their concluding suggestion:

> <Dexter the Blade> Yes, I pay God knows how much for my tariff which is silly :P

<thfc1> Me too – 30 quid a month

<Dexter the Blade> So we could say that some of that at least could go to funding and the companies would still get loads

<Dexter the Blade> Take 10 p of that - Use it for funding
<thfc1> it could work

<Dexter the Blade> 10p from so many million people, would add up to a fair amount!

The participants' basic suggestion then, was for a percentage (they used indicative amounts, but of course did not go into too much detail in this regard) of mobile telephone subscription fees (tariffs) to be put directly towards developing funding resources.

7.3. Conclusions

This chapter has discussed the substantive findings of this thesis. As noted in its introduction, the central aim of this chapter has been to present the citizens views on mobile telephones, risk and health as findings from a public participation process, rather than to critically analyse them as sociological data. The more theoretical and methodological analysis will be discussed in Chapters 8 and 9 respectively. By substantive findings, we mean the citizens' views on the issue of MTRH. As was also noted in the introduction to this chapter, the validity of a public participation process relies on its ability to present the citizens' findings. As such, the essential purpose of this chapter is to present the citizens' views as clearly as possible. This has been done most succinctly and effectively through the summary report, which has been subjected to respondent validation. The purpose of this respondent validation was to ensure as far as possible that the focus was specifically on what the citizens themselves said about the issue, in their own words, rather than on the researcher's interpretations of their views as an analyst.

Beyond the findings presented in the summary report, further substantive findings have been discussed under 7 main thematic headings: The 'state of play': citizens' assessments of the evidence; 'Inconclusive conclusions': Identifying levels of uncertainty The 'benefits to society?': The utility of mobile telephones; 'Upsetting the

applecart': The entrenched use of mobile telephones; NIMBY; The role of government: information provision; The role of government: encouraging a precautionary approach ; the role of government: information provision; Research funding: transparency and trust. Without retracing the discussion to any great extent, it is possible to elaborate on some of the more significant and surprising findings of the Citizens' POLIS.

In short, the citizens' felt that they were 'not overly concerned' by the issue of MTRH. If whether or not something is 'an issue' is relative to the extent to which it causes public concern, we might ask whether or not based on the citizens' assessment, MTRH should be considered 'an issue' at all. However, although the citizens were unconcerned with any possible current risks to health, and did not feel that the use or development of the technology should be curtailed in any way, they were more wary of the possible long-term effects of mobile telephone use. The citizens' argued that current scientific uncertainty on the potential long-term biological effects of mobile telephones ensured that there should be continued scientific research in this area, and continued funding for such research. In terms of political and scientific institutions responses to the issue, it was argued that although they were satisfactory in terms of technology regulation, they were unsatisfactory in terms of public engagement.

The citizens' attitude was that little change was needed specifically in regard to the regulation of mobile telephone radiation. The citizens' supported continued funding into the issue and saw the sub-areas of base stations and cancer to be the most important in this respect, and also argued that such research could be split between the government and the mobile telecommunications industry. The implications of these findings in regard to MTRH are generally that political and scientific institutions should 'carry on as usual'. There were however, wider implications identified concerning the ways in which political and scientific institutions engage with the public. It was argued that the public were not being given sufficient information about the issue and were unable therefore to make an informed decision for themselves. The Citizens' POLIS (and public participation processes in general) of course, provides one such example of how a group of citizens can be well-informed so as to enter into political deliberation about a given issue (something which will be discussed more in Chapter 9). However, the citizens also noted the need to provide information for, and to engage with, the

public on a wider level, something which future critical inquiry could probe in more depth.

Chapter 8: Theoretical findings - how did the citizens' views relate to existing representations of key concepts found in the STS literature?

The aim of this chapter is to discuss the citizens' deliberation in terms of three key STS concepts – 'risk', 'precaution' and 'expertise'. Part 2 of Chapter 6 provided a survey of the STS literature as it applies to mobile telephones and other 'new' technologies. It identified these three concepts as being prevalent in this literature. It looked at how 'risk', 'precaution' and 'expertise' had been discussed within the literature and particularly at how various laypersons and publics have represented, understood, and engaged with, these three concepts. The central aim of this chapter then is to contribute to this discussion, from a different, or rather under-represented, perspective. That is, using data from the Citizens' POLIS, it is possible to discuss how the participants represent, understand and engage with, these concepts *within an informed, deliberative public participation process.* As was noted in Chapter 6, and based on the definitions provided in Chapter 4, 'public engagement' research broadly construed includes broader and more diffuse (that is, more 'organic') interactions between publics and science and technology. In the Citizens' POLIS however , interactions between citizens and science and technology are mediated within an institutional space for deliberation as organised by the social scientist. This can allow for differences in the types of sources upon which the participants' understandings of 'risk', 'precaution' and 'expertise' are based, as well as the means through which they are communicated. That is, in the aforementioned public engagement research, social scientists will be often interested in how individuals and publics understand and interpret concepts such as 'risk', 'precaution' and 'expertise', based on their existing knowledge derived from sources such as the mass media. In order to build a picture of these individuals' and publics' understandings, social scientists will often use elicitation or consultation devices, such as questionnaires, interviews or focus groups. Of course, there is nothing limited about this research *per se.* It produces important understanding about organic public engagement (as defined in Chapter 4) with science and technology – including with key concepts such as 'risk', 'precaution' and 'expertise'. The point made here is that the Citizens' POLIS, as an orchestrated public participation process, provides a different (a complimentary but different) type of understanding. The citizens' conceptions and representations of 'risk', 'precaution' and 'expertise' are founded on their assessment of

a wide variety of sources of information (including the mass media), representing various stakeholder perspectives. These conceptions and representations are then communicated, shared, exchanged and (re)developed within their deliberation. In short, this chapter will show how concepts such as 'risk', 'precaution' and 'expertise' are represented by a group of citizens following their cooperative social inquiry into the issue of MTRH.

8.1. What did the citizens understand by 'risk'?

It is important to remember that the participants in the Citizens' POLIS had not previously been directly and closely engaged with the issue and had not been explicitly involved in debate over MTRH. However, this is not to say that they had not already been generally engaged with the issue of risk as it relates to MTRH. As discussed elsewhere in this thesis. The very fact they have already chosen to use mobile telecommunications technologies (albeit to varying degrees – see Appendix G) suggests that they have already encountered their first risk-related decision – i.e. whether or not to use a mobile phones and how much to use it. Beyond this basic decision, the citizens also bring to the deliberation any pre-existing knowledge, which will most likely have come from their engagement with the mass media (or through discussions with others whose understandings will most likely have come via the mass media). The aim of public participation processes, as has been argued throughout, is to provide a group of citizens with multi-perspectival, *balanced* information from a variety of sources and representing as many different viewpoints as is relevant.

As discussed previously (Chapter 6.2.1.) risk – like precaution - is a complex concept when subjected to close sociological analysis. As such, in keeping with the aim toward neutrality, the researcher was careful to present and frame this issue as symmetrically as possible (cf. D. Bloor, 1978; see also Chapter 4.6.1.). Although it is inevitable that some degree of pre-framing will occur, as argued in Chapter 4, it is preferable that this pre-framing is undertaken by someone whom does not directly work for, or with, stakeholders with a vested interest in the issue. The term 'risk' did of course feature prominently throughout the evidence, although depending on the position of the interviewee referring to it, mobile telecommunications technologies were generally

referred to in terms of being either high or low risk. This section will discuss how the citizens understood the concept of risk, specifically in terms of mobile telecommunications technology, but also how this relates to more general conceptualisations.

It is indeed interesting to note how the citizens were quick to move beyond the specific substantive case study and discuss the issue of risk in relation to their everyday lives. This compliments work on the everyday social and cultural interpretation of risk (e.g. Irwin *et al,* 1999), as well as other studies of public participation which focus on participants' perceptions of risk (Horlick-Jones *et al,* 2007b). Participants in the Citizens' POLIS compared their respective attitudes to risk, and spoke of this attitude as being a means of guiding decisions made in daily life:

> <alanne> I'm a pretty risk-conscious person
>
> <lovecraft> don't think about it a lot, I am fairly laissez faire ... I would spend my life in a permanent state of anxiety otherwise
>
> <thfc1> I take some risks but not ones that will kill me
>
> <cookiemonster> if there is an obvious risk, I won't take it. But risk is based on perception. Sometimes we exaggerate risks and sometimes we undermine them
>
> <moderator> It is interesting to see the different attitudes to risk we have here.

It is indeed an interesting observation that some citizens had quite different attitudes towards risk and risk-taking from one another. *alanne* and *lovecraft* display fairly polarized attitudes to risk-taking in everyday life, with the former claiming to be quite 'risk-conscious' – suggesting she is quite wary of potential risks – whilst the latter suggests he intentionally refrains from worrying about potential risks. The latter view is particularly interesting since it suggests what we might term a conscious ignorance of risk. This is of course something quite different to the principle of 'prudent avoidance' - essentially a precautionary approach – which will be discussed in the net section. *lovecraft,* despite being aware that potential risks exist (thereby not being truly ignorant of them) chooses to be preoccupied with them. In suggesting that he is 'fairly laissez-faire' *lovecraft* implies that he likes to allow things to take their natural course, as far as possible, and (in relation to discussion in Chapter 7) reiterates the general anti-

interventionist stance of the participants on the issue under deliberation. He also goes on to suggest that were he to be otherwise inclined – that is were he to be more concerned over potential risk - then it would be this that would actually cause an adverse effect, for example the creation of a 'permanent state of anxiety'. This links to the participants' discussion of electrohypersensitivity (see Chapter 7.2.1.) that sometimes, worrying about possible adverse health effects can actually be more of a 'risk' in itself than that which is actually being worried about in the first instance. Although the point was made from a 'laissez-faire' participant, it was seconded by a 'risk-conscious' participant:

> <alanne> taking things as seriously as I do causes other health risks from stress! [I'm] trying very hard not to take things so seriously any more [sic] and look after myself but you can't change the way you are ... still [I] don't worry about mobiles too much.

In regard to the group's assessment of risk as related to mobile telephone use, this quote is quite telling. Even the self-professed 'risk-conscious' member of the group – who admits that she is actively trying to be less risk-conscious – still concludes that she is not too concerned by this particular issue. This strengthens the earlier argument (see Chapter 7, particularly Chapter 7.2.1. and 7.2.3.) which suggests that the participants were, on the whole, 'not overly concerned' by mobile telephones and did not see the technology to pose any significant and established risk to human health.

Data from the Citizens' POLIS also relates to the Social Amplification of Risk Framework, and in particular to Burgess' (2004) view that the debate is characterised by relatively low 'real' risk, it seems as though the citizens' assessment were along similar lines to that of the scientific consensus (both acknowledge the uncertainty but feel that overall there is little cause for concern). In the Citizens' POLIS however, the perception of risk was not amplified (with the exception of one participant – see Chapter 9.2.). If anything deliberation served to attenuate the perceived risk – that is, it assuaged the participants' concerns (on the whole) (see also, Chapter 9.2). In order to explain the above, we might look to how and why perceptions of risk differ in the Citizens' POLIS *vis-a-vis* more organic forms of public engagement with science and technology. As was noted in Chapter 6 (6.2.2.), the media play an important role in an individual's perception of risk. As 'entrepreneurs of meaning' they are potential risk

amplifiers (or attenuators) (Petts *et al,* 2001). The participants also noted that the media, despite being an important source of public information, has its limitations:

> <lovecraft> proper debate does not really happen in the mainstream media

> <Spike> the media will present what will sell newspapers...and that is always the hard-hitting...imagine how many copies 'a balanced look at base stations' would sell!

> <Dexter the Blade> whatever is interesting/disastrous will sell papers ... whether it is true or not ... As we have seen countless times when papers/media have to retract things that are false

Two points can be made here. Firstly, this suggests that the media focus on issues – and particular aspects or interpretations of issues – which are sensational and which will therefore sell newspapers. Of course, this fits in line with arguments (see Chapter 6.2.1.) that the media is a primary risk amplifier. Secondly, this thread of dialogue also suggests that the citizens feel that the media is unable to offer a balanced view of an issue and allow for 'proper debate'. Of course, it is important to acknowledge arguments that the mass media are not necessarily a negative influence on public perception of risk and that such media are actively interpreted by its readers or viewers (Petts *et al,* 2001). However, it is also important to be note that the mass media are only one source of evidence on a given issue, and although they may themselves draw on different sources of evidence, there is still the danger that only one 'side' of the debate is available to the public. This of course runs counter to the aim of the public participation process, as an alternative institution for public engagement, wherein public deliberation that is informed by a balanced, symmetrical review of relevant evidence. In the Citizens' POLIS, individual perceptions of risk are influenced by the group's deliberation of their conceptions of 'risk' – stemming from their discussion of the balanced evidence. As discussed in Chapter 3, 'good' deliberation is both reasoned and informed. That is, individuals are expected to substantiate their viewpoints - viewpoints which are informed by their active engagement, not only as individuals but as a group, with a variety of different sources of evidence, and not just the mass media. Unlike the mass media, public participation processes attempt to provide information from all the

relevant or known (stakeholder) 'sides' of the debate. This is one factor which could account for why the participants in the Citizens' POLIS might have different interpretations of mobile telephones and 'risk' than public perceptions as represented in the existing literature on the subject. We will return to the role of participation processes in providing multiple sources of evidence from different stakeholder viewpoints in the next chapter.

Data from the Citizens' POLIS can also be discussed in terms of Slovic *et al*'s (2002) use of the affect heuristic. The affect heuristic, as was discussed in Chapter 6.2.1., proposes two main points: Firstly, that the more dreaded an issue, the greater the perceived risk; secondly, that there is a negative correlation between risk and benefit. It can be seen that the data from the Citizens' POLIS supports the second point but contends the first. In regard to the first point (as seen in Chapter 7), cancer, despite generally being seen as a dreaded disease, was not seen to be necessarily the biggest cause for concern. That the citizens did not allocate it the most money in their allocation exercise, could suggest that they did not see it as posing the greatest risk There is here a need to avoid over-interpreting the data and arguing against the affect heuristic. However, the finding that the citizens didn't focus more on the issue of cancer, given its dreaded status, is surprising (it is worth noting also that the deliberation session on cancer was the shorter than most of the other sessions). Research into cancer was seen as less of a priority than research into base stations and research into biological effects. In regard to the second point, the findings suggest that there was a negative relationship between perceived benefit and perceived risk. It was found that the citizens both argued that there were relatively little risk associated with mobile telephones at the same time as there were many important benefits to be had. As was discussed in Chapter 7, a number of the citizens felt that mobile telecommunications were useful to society. As one might expect then, there was a correlation observed between perceived high utility and perceived low risk.

Of course, the deliberative environment to some extent attenuates the role of affect within decision-making. As was suggested in Chapter 6, reducing the time available for analytic deliberation allows more room for affective considerations, which in turn enhances the inverse relationship between perceived benefits and risks (Slovic *et al*, 2000). This might partially account for why the issue of cancer was not given more

priority, particularly given that a number of citizens' had previously stated that they had been affected by this issue previously (interestingly they did not significantly allocate this issue more money in the allocation exercise than the other citizens). Although the inverse relationship between perceived costs and benefits was still prominent after the deliberation, the gap between them was seen to have narrowed somewhat. At the start of the process, no participants expressed a concern about the potential risks to be had from mobiletelecommunications, whilst during the deliberation, a number of participants (albeit a minority) became increasingly vocal about their concern that there might be some risks (see Chapter 7). That said, from the data, there is little in the data to suggest that the SARF (Kasperson et al, 2006) can be easily applied to a group of deliberative citizens. As was discussed in Chapter 6, the MTRH debate has been characterised by Burgess (2004) as a typical example of the social amplification of risk – namely, high public perception in spite of (in Burgess' view at least) little scientific evidence suggesting any significant risk. Overall, the citizens in the Citizens' POLIS however – as discussed in Chapter 7 – saw there generally to be 'little cause for concern'.

Examples of the importance of deliberation on the formation of shared opinions were not hard to come by within the Citizens' POLIS. The following passage shows the citizens' negotiating what they see as acceptable risk:

> <Evefant> I guess it depends on what you get out of taking the risk
>
> <lovecraft> v [very] true! Bigger and better means people will take the risks ... people would deffo [definitely] chance it - its [sic] human nature
>
> <Evefant> but it's human nature to be worried too, I think
>
> <lovecraft> life's too short to be too much that way inclined
>
> <Evefant> but if you only live once it's a good thing to keep that life...
>
> <lovecraft> its a balance
>
> <Evefant> everything's a poison in the wrong dosage

The above passage of deliberation shows some interesting interplay between *lovecraft* and *Evefant*. The two participants played protagonists in the debate over the extent to

which risk should be involved in a person's decision-making (and attitude to life in general). Whilst both participants began by agreeing that risk-taking is inextricably bound to the perceived benefits to be had from taking a given risk, they then diverged over their characterisation of risk in relation to 'human nature'. *lovecraft* argued that it is human nature to take chances, again evidencing his advocacy of a 'laissez faire' attitude to risk-taking. *Evefant* on the other hand, contended that it is also human nature to worry about things. Their views constitute a nice counterpoint – in which the same argument is made from different perspectives. Both suggest that the concept of risk is salient to the perception of living and making the most out of one's life. Whilst *lovecraft* suggests that making the most out of one's life involves generally avoiding thinking about 'risk' as a concept ('life's too short' to worry about it too much), *Evefant* contends that making the most of one's life also necessitates a certain respectfulness towards risk as a reality (that is, there are risks which genuinely pose a threat to people's lives).

Despite the existence of differing viewpoints, both *Evefant* and *lovecraft* appear to reach a compromised viewpoint in which they eschew either of the extremes of a (consciously) risk-ignorant position or a risk-conscious position. *lovecraft* concedes that an individual's ideal approach to risk should be a balanced one, whilst *Evefant* succinctly notes that everything could possibly present a risk in immoderation (with 'immoderation' being dependent on the particular thing which poses the risk). That they reached a more moderate position through deliberation is particularly interesting. As noted in Chapter 6.2.1., prominent within the literature on group communication is the phenomenon of group polarisation (Lea *et al*, 1990; Postmes *et al*, 1999; Spears *et al*, 2002). The findings here however run contrary to this theory, in that they are an example of how deliberation can also allow participants to move from more extreme individual viewpoints to a more moderate group viewpoint. A fuller discussion of the effect of group deliberation on individuals' views can be found in Chapter 9 (particularly 9.2).

8.2. What did the citizens understand by 'precaution'?

In the final deliberation session, the citizens were provided with evidence concerning the 'precautionary principle' as it had been applied to the issue of MTRH. A number of

the Stage 1 (stakeholder) interviewees had discussed the precautionary principle in their interviews, and so this was incorporated into the evidence for this session. The citizens were also provided with a weblink to a section of the Stewart Report as well as a short AV interview with a scientific adviser to government – both addressing specifically the issue of the precautionary principle. The citizens' deliberations were given some guidance in the form of a question, set by the researcher. The question posed was: 'do you feel as though the precautionary advice is a satisfactory response to the issue of MTRH'. As discussed in Chapter 7, the citizens did generally agree that a precautionary approach was warranted because of the existence of scientific uncertainty (and the perceived need for more research and more evidence). Of course, the fact that the citizens concluded that there was a degree of uncertainty surrounding this issue is not a limitation of this process – it is actually an expected and necessary aspect of it. As was discussed in Chapter 2.2.1 (see also Chapter 4), the public participation process, as a type of 'extended peer review' (Funtowitcz and Ravetz, 1993) is particularly relevant and useful for issues where science is uncertain.[74]. The aim of public participation processes then is to dervide a sense of what we should do *in spite* of scientific uncertainty – how we can mitigate for it and deal with it – from the perspective of the citizen.

The citizens also argued in favour of maintaining precaution as *advice*, and were strongly opposed (with the exception of one participant) to the imposition of precaution *as legislation*. They distinguished between making action compulsory and voluntary. Because mobile telephones do not present 'known risks' (something which will be developed later in this section), the government it was argued should not be allowed to intervene in order to protect individuals from such risks.

In relation to the literature on this subject, as discussed in Chapter 6 (6.2.2), the data in the Citizens' POLIS support certain arguments and conflict with others. One argument which the data fails to support is the argument that the provision of precautionary advice can actually have the opposite effect to which it intends – that is, it can intensify rather than assuage concern (Barnett et al 2007, 2008; Wiedemann et al 2005, 2006). The findings from the Citizens' POLIS on MTRH however, suggest that the provision of

[74] Or in Funtowitcz and Ravetz,'s (1993) terms, where the science is 'post-normal'.

precautionary advice (which formed part of the evidence) did not serve to create any concern, and if anything, served to further reassure the participants who perceived there to be little risk from mobile telephones. Two things are to be noted however. Firstly, unlike the experimental studies by Barnett *et al* (2007, 2008) and Wiedemann *et al* (2005, 2006), this study did not provide the participants with only one source of information – namely the precautionary advice issued by governments (in the form of advisory leaflets). As such it is possible, indeed likely, that the other sources of evidence – e.g. the mobile telecommunications regulatory authorities and industry representatives' interviews, and (as discussed in section 8.3. below, particularly the scientists' interviews –contributed significantly to the participants' lack of concern. Nevertheless, it was still evident that the precautionary advice, in terms of 'reassuring' the public, did have a 'positive' effect on trust in health policy, contrary to Wiedemann's (2006) argument. This relates to earlier discussion (in Chapter 7) which saw the level of trust in government, specifically in the context of health policy, to be higher than expected. An important conclusion of this line of discussion is therefore that precautionary advice (on MTRH) can serve to reassure and does not *necessarily* create concern as is sometimes implied or emphasised in the literature. Beyond this specific argument, this particular line of discussion also supports a broader argument - one which is recurrent throughout the findings of this thesis. This thesis and the aforementioned studies provide very different types of 'public opinion'. In the latter, controlled experiments were undertaken, in which participants were provided with information and subsequent questions in isolation from one another. In the former of course, the Citizens' POLIS as a deliberative participation process, encouraged the participants to share and discuss their opinions and jointly analyse the provided information. This is perhaps therefore further evidence that what were essentially non-deliberative public consultation processes can produce very different findings from deliberative public participation processes. The differences between individualist and deliberative understandings of 'precaution' will be discussed later in this section.

It was noted in Chapter 6.2.2 that 'precaution' defies a single agreed-upon definition. This is perhaps appropriate, or even ironic, in so far as precaution itself is inextricably tied to 'uncertainty'. Indeed, as well as being seen as a response to uncertainty, precaution has also been seen to create uncertainty (Levidow, 2001). Rather fittingly, the sociological definition of precaution is itself uncertain. Interestingly, this idea that

'precaution' defies a general definition is something which was suggested by some of the citizens' themselves:

> <moderator>what does precaution mean to everyone?
>
> <thfc1> it could be anything
>
> <Dexter the Blade> Moderator, I'm not sure that we could put parameters on definition - it is too difficult

Other participants however, did attempt to offer a definition. They proposed that precaution be seen as the weighing together of risks and benefits:

> <cookiemonster4> outweighing costs and benefits
>
> <alanne> risk against benefit
>
> <Dexter the Blade> Weighing cost against benefit
>
> <thfc1> risk ... to me its all about knowing the risk involved with whatever your doing
>
> <lovecraft> simple sensible things like looking when I cross the road or locking the door - i have no time for worrying about food additives or whether cling film may give me cancer etc...

As was discussed in Chapter 7, in the context of MTRH, participants were reluctant to conceive of benefits without simultaneously considering possible risks which use of the technology might also entail. This interpretation of precaution as cost versus benefit accords with public interpretations as found in the literature (see Chapter 6), for example Timotijevic *et al's* (2006) focus groups. Given that the participants' general conclusion was a lack of concern over the issue, it is clear that they believed that the perceived benefits of the technology were more salient than the perceived costs (cf. Barnett et al, 2007).

The citizens' understandings of 'risk' as a concept, has already been discussed in the previous section. However, it is interesting to note how, in attempting to define 'precaution' the citizens seemed to focus on 'known risks'. Substantively, this argument was discussed in Chapter 7.2.3. In this section it is now possible to discuss the theoretical implications of this argument in more detail. As discussed in Chapter 7, the

participants characterised the MTRH debate as being inherently uncertain. They did not however refer to this line of argument when asked explicitly to define or assess a precautionary approach. There was no explicit mention of 'possible' or 'potential' risks, nor was there any reference made to 'uncertainty'. Furthermore, the definitions offered by *thfc1* and *lovecraft* suggest that we cannot detect an implication of possibility or uncertainty, and the participants are very much concerned with known risks. Such statements build on earlier discussion (see Chapter 7) to suggest that citizens are more concerned with those risks which they do know than those which they do not. A common theme throughout the deliberations was that, given there are many known causes for concern, there is 'no time' left for what only might be a cause for concern. According to the participants, dealing with the devil we do know is time-consuming enough, and produces more tangible benefits than dealing with the devil we don't.

Their arguments resonate with the classification of different types of uncertainty, as discussed in Chapter 6.2.2. Using Wynne's terminology then, we might suggest that the participants are rather less concerned with uncertainty than they are with risk. Using Rumsfeld's terminology, we might suggest that they are less concerned with known unknowns than with known knowns.

The participants in the Citizens' POLIS use everyday examples to illustrate their argument about known risks (or known unknowns in Rumsfeld's terms). *Lovecraft* for instance uses the example of crossing the road. In performing this activity, he is aware of the very obvious, known risks involved, and therefore takes measures accordingly so as to minimise these risks (i.e. 'looking [for traffic]').[75] Taking such measures of course provides very obvious benefits, both in terms of the successful completion of the task (i.e. crossing the road) and in terms of the safe completion of the task. Just as with the activity of driving itself, the task of crossing a road is usually perceived as having known benefits which outweigh the known risks. This is of course not to say that one would indiscriminately cross the road without, for instance looking both ways or using a pedestrian crossing where available. Looking both ways or using pedestrian crossings do not remove risks (there is of course still a chance of getting hit by a car) but they do

[75] The risk posed by road traffic accidents is a quantifiable, probabilistic risk, captured by statistics such as 'There probability of being involved in a road traffic accident is 16:1, whilst the odds of dying in one is 1 in 12300.' For example, the Office of National Statistics (ONS) has detailed statistics on the prevalence of road traffic accidents in the UK, see: http://www.statistics.gov.uk/CCI/nscl.asp?ID=8094

reduce the risks – they are measures associated with a cautionary approach. A cautionary approach is of course different from a pre-cautionary approach, insofar as the latter urges care in relation to known risks whilst the latter advises care in relation to possible or unknown risks. It can be largely unpredictable (in terms of knowing who will get hit and when), but it is predictable in that risk assessors are able to predict that each year a certain (average) number of people will die directly from this activity. In contrast, *lovecraft* points to activities which he feels do not warrant time being spent on concern, but which are 'public scares' prompted by and expressed through the media and on the internet. Concerns over food additives and 'cling film' were referred to on more than one occasion by the participants as examples of possible everyday risks. However, the participants discussed the issues disdainfully, not necessarily (at least not explicitly) because they felt that evidence for such risks was in itself spurious, but rather because the evidence is not sufficient to establish such a risk. Whilst avoiding using food additives and cling film would allow one to avoid these possible risks, doing so would also prevent one from reaping the known benefits of these products (for those who perceive them to have benefits of course). The underlying argument the participants made appears to be that, if we worry about everything which could possibly pose a risk – if we are too precautionary - then it is likely that we will prevent ourselves from reaping all the benefits:

> <cookiemonster> u can only live so precautionary [sic] ... even people who do everything by the book could be killed in a freak accident ... there is just so much random crap going on we can never predict what will happen

cookiemonster argues that there will always be uncertainties (known unknowns) and life is always to an extent unpredictable. This suggests that even the most precautionary of approaches cannot mitigate and protect against all possible risks. The idea of certain dangers being random (i.e. 'freak') is important, because it shows that the participants, when discussing risks are aware that not everything that is a potential danger is linear and quantifiable – opposing a narrow quantitative definition of risk assessment and its predilection for prediction. This relates to arguments discussed in Chapter 6.2.2. (e.g. Klinke et al, 2006). Although the term 'weighing' is used above, participants do not necessarily imply that they associate precaution with a quantitative approach to assessing costs and benefits. Although it is not discussed using technical terminology, *cookiemonster* does appear to suggest that some potential risks, such as those posed by

mobile telephones are stochastic phenomena (i.e. 'random crap') are not amenable to traditional quantitative methods of risk assessment. In this sense, the citizens' deliberations support arguments increasingly common within the sociology of risk, namely that traditional quantitative methods of risk assessment need to be supplemented with other (more qualitative) methods of understanding risk which also account for scientific uncertainty (generally unnameable to quantitative assessment).

Both *lovecraft* and *cookiemonster* talk of precaution in personal terms and imply that it is therefore the individual's responsibility to apply a precautionary approach to the issues noted above, and of course to the issue of MTRH specifically. The participants were asked by the moderator to expand on this:

> <moderator> do we weigh these risk against benefits, or should someone do it on our behalf, or a bit of both?
>
> <lovecraft> for ourselves largely – tho kinda [sic] depends on the issue surely?
>
> <Dexter the Blade> Not governments or companies ... Until we find out whether there are actually health risks - we should be the ones to do the weighing.

lovecraft and *Dexter* both suggest that in the first instance it is the individual's own responsibility as to whether a precautionary approach is warranted or not. This argument ties to their more specific discussion (see Chapter 7) of the case of MTRH, in which they suggested that individuals' personal liberties should not be encroached upon in order to allow the government (or companies) to 'enforce precaution' so to speak. It relates also to existing arguments in the literature (see Chapter 6.2.2.) of precautionary advice, which suggests that participants respond to this advice in very individualistic terms. Just as the decision to use a mobile telephone is a personal choice, so too is the decision to follow precautionary advice. Here, the discussion of precaution resonates with Wynne's conception of indeterminacy (See Chapter 6.2.2). Indeterminacy it was suggested is based on the idea that our knowledge about risk is conditional on the specific social context within which that risk is perceived. As such, whether a given technology – in this case the mobile telephone – is perceived as risky depends on the particular viewpoint(s) of the individual(s) concerned (Harding, 1998). Whilst some might see mobile telephones as justifying a precautionary approach, others might not.

Of course, to say that the need for precaution is indeterminate, insofar as it can vary between social contexts and indeed between individuals, is not to say that the decision of whether a precautionary approach should be taken or not cannot be aided by reasoned group discussion and deliberation, or that the process of deliberation might not result in different individual perceptions or risk and interpretations of precaution. As was noted above, data from the Citizens' POLIS has suggested, participants conceptions of, for example 'precaution' can look very different in deliberative participation processes as opposed to non-deliberative public consultation processes. That said, even if participants retained an individuated conception of risk following their deliberation, their data suggests that this does not necessarily 'heighten' risk perception (Burgess, 2004: 26), since as has been made very clear, the citizens' perception of risk from mobile telephones was generally low.

8.3. What did the citizens understand by 'expertise'?

The participants also discussed the issue of 'expertise'. As discussed in Chapter 6.2.3., the question of whether expertise can be treated as something that is ontologically real is a prominent an ongoing one within STS. The use of inverted commas is often used symbolically to question the truth or validity of a certain concept or claim. One interesting observation is that during the deliberation sessions, participants themselves frequently placed the term 'expertise' in inverted commas, something which might suggest their cautiousness in employing the term:

> <littlered> I think, like most products that give warnings about very rare potential problems, the "experts" make it seem to be far more dangerous than it is in reality

> <Evefant> I think that as long as research is being made, the opinion amongst the "experts" will change... like with evolution

This relates to the central question, as outlined in Chapter 6.2.3., of what is 'expertise'? It is important to be aware however that the use of inverted commas could suggest a scepticism concerning the nature of 'expertise' in general or it could simply signal their doubt concerning certain individuals who purport to be 'experts' on the issue of MTRH whom they feel are undeserving of that title.

littlered's assessment is particularly sceptical and is interesting because it suggests that she feels 'experts' can potentially play a negative role in the development of public opinion and in the creation of public concerns. This is interesting because she is suggesting that experts themselves are risk amplifiers (Kasperson *et al,* 2006), through communicating directly with the public (via product information or consumer health advice). In this sense, she agrees that in some cases, precautionary advice can amplify rather than attenuate concern (although as we saw in the previous section, this is not the case with the citizens' response to precautionary advice in the case of MTRH necessarily) (Wiedemann *et al,* 2005, 2006; Barnett *et al* 2007, 2008). She implies that labelling a piece of precautionary advice 'expert' advice means that it is more likely to prompt (in her opinion, possibly unwarranted) public panic.

These views however did not seem to be shared by the other citizens, many of whom treated expertise as real and whom had more positive opinions on the role of experts in general, and in particular scientists as experts:

> <Dexter the Blade> If a scientist says something, I am more inclined to believe it than an activist ... people are more inclined to believe those with more knowledge on the subject ... hence the scientists or professors, not the activists
>
> <thfc1> i would believe a scientist
>
> <Spike> out of the information we received I would most likely believe university professors as it seems that they would be less biased

Dexter, *thfc1* and *Spike* all share the view that 'scientists as experts' are more believable than the other commentators and stakeholders in the debate, in particular the activists. These participants see scientists as providing more credible evidence on the issue. This relates to existing research on the validity and credibility of different sources of public information, as discussed above (see: Chapter 5.3.4. and Chapter 6.2.3). Of course, these findings add a new perspective to this research – and a new representation of the public conception of expertise, because they are derived from an informed and deliberative public participation process. It is more common to find public conceptions of expertise being derived from public consultation processes, such as the Eurobarometer (2005). In such surveys, individual responses to the question 'who do you trust for scientific information' might differ partly due to the fact that they have

been exposed to different sources of information. For example, if people are not exposed to scientific publications or to the tabloid media, they do not have a direct basis upon which to judge whether or not they should trust those sources of information (although of course it could also be the case that people chose not to consult a particular source of information precisely because they feel it cannot be trusted). Of course, it is possible that participants in the Citizens' POLIS would likely have been exposed to different sources of information concerning the issue of MTRH (although they were screened so as to ensure they did not have too much pre-existing knowledge on the issue – see Chapter 5). The point made here however, is that in the Citizens' POLIS there is a degree of equalisation in terms of information resource, since all participants are, in the first instance, exposed to the same sources of information. As was also discussed in Chapter 5, the social scientist-as-organiser endeavours to ensure that these sources are diverse and balanced. Moreover, unlike in a public consultation survey, participants in the Citizens' POLIS were given time to consider all these sources, to analyse it in depth, and most importantly, to deliberate on it with a group of their fellow citizens. The findings of the Citizens' POLIS therefore suggest that post-deliberative views on expertise and credibility might be similar to non-deliberative (consultative) views on expertise and credibility. The findings suggest that after seeing, analysing and discussing a wide variety of different sources of information from a wide variety of stakeholders (information which were presented in such a way as to attempt to avoid imposing any pre-conceived biases), the participants on the whole saw the scientists as being the most credible source of evidence on the issue.

Dexter takes the above argument further by implying that not only do the scientists offer the most valid and credible form of knowledge, but that they offer the only *legitimate* source of knowledge on the subject. This is interesting from an epistemological point of view, since it tacitly equates science with expertise and expertise with knowledge. Knowledge in *Dexter's* view is scientific knowledge. *Dexter* fails to consider the type of 'embodied knowledge', which the social sciences (and STS in particular) would see the activists to possess. Dexter's epistemological model appears to preclude the forms of alternative expertise or 'lay knowledge' (as discussed in Chapter 6.2.3.) and deems it relatively unimportant to the decision-making process. Despite the activists' evidence being presented on equal terms with the scientists' evidence, the former generally failed to persuade the participants of its credibility as relevant knowledge (and in *Dexter's*

view, even 'knowledge' per se). Important to the context of this argument however is *Dexter's* status as a medical student (see Appendix G). In being more readily able to identify with the scientists, he is arguably more likely to affiliate with their views and to validate their knowledge.

Spike gives some explanation of the reasons as to why he feels that scientists – or specifically university professors – should be considered most credible. He argues that it is because of they can be seen to be independent. Of course, it is important to point out that he is specifically referring to university professors as opposed to scientific researchers working in government or industry for example. This is something which also supports existing research (e.g. from the Eurobarometer survey). The implication of these findings therefore is that it is possible to see deliberation as a process which might reinforce existing views on an issue, and not necessarily as a process which will change them (See Chapter 5).

However, not all participants were convinced that scientists - even university scientists - were unbiased, and a couple of caveats were offered as to why scientists should not be given *carte blanche* over political decisions related to the implications of their research:

> <littlered> I don't think professors are always unbiased.
>
> <Evefant> professors can be convinced of almost everything ... and an expert could be bought of course. I think it's scary that so much of the cases for and against rely on that.
>
> <cookiemonster> and just because u r an expert doesn't mean u r right... infact [*sic*] u could be very stubborn and indifferent to change if u are ... I think its [sic]funny how experts in the same field can come to totally different opinions.

It is important to note that, despite seeing them as the most credible source of knowledge, the citizens' were not suggesting that scientists, due to their expertise, should be given total control over decision-making on scientific issues (as they relate to public policy). Quite to the contrary, they acknowledged that there are some dangers associated with leaving decisions to the scientists:

> <cookiemonster2> we left the atomic bomb to the scientist....

<Dexter the Blade> yes, they succeeded in building it, but what happened afterwards [was] not good

<cookiemonster2> no, not good

<cookiemonster2> and well, what about stem cell research? How far would scientists go given the reins? I'm just saying ... the scientist may not always do what is in the public interest

<Dexter the Blade> Yes, they should be kept on track - just like this issue [i.e. MTRH] should be

<cookiemonster2> we hope so

In this passage of deliberation, *cookiemonster* and *Dexter* are sceptical of the idea that decisions related to science and technology policy should be placed entirely in the hands of the scientists themselves. This is because they acknowledge the normative, and often highly value-laden, nature of applied scientific research. They use the historical example of the atomic bomb to make the argument that technological innovation is inextricable from the ethical concerns which relate to the potential applications of that technology. As *Dexter* points out, it is possible for a development to be considered both a scientific success and a social or political disaster. They also refer to the more contemporary example of stem cell research. *cookiemonster* poses the hypothetical question of 'how far would scientists go?' with this research should they be given total control over decision-making. In posing this question, she warns of the dangers of unchecked power for those involved in the S&T research. Finally, the participants link this discussion back to their case study of MTHR, and argue that decision-making in regard to this issue, as with regard to the aforementioned issues, also needs to be accountable, monitored and distributed. It is not implied here that this must necessarily entail the need for public participation processes, although one of their purposes is of course the extension of responsibility in science and technology decision-making. The citizens views on the role of public participation processes in the extension of decision-making responsibility will be discussed in the next chapter.

On the whole however, as has been noted above, the citizens equated credible knowledge with expertise and expertise with science. Interested to know what the citizens explicitly understood by 'expertise', the moderator probed this line of enquiry further:

<moderator> so what does everyone understand by the term expert?

<thfc1> anyone can be an expert. I could say I know alot [sic] about the internet and claim to be an expert

<Dexter the Blade> But to be an expert you need experience

<Dexter the Blade> And by gaining experience you gain more insight into that particular topic. So experience = expert I suppose ... and experience is gained with years ... it isn't something that is intuitive or you are born with the knowledge about, it is something that needs to be worked on and read about

<alanne> It seems that here [in the Citizens' POLIS], anyone who is asked their opinion who has had some input however little is presented as and expert with valid opinion

<alanne> but I think it [an 'expert'] is someone who has looked into their specialism and studied a lot of evidence

<Evefant> and they have professional titles

In this passage of deliberation, the participants propose two definitional criteria of expertise: experience and credentials (qualifications). One participant (*thfc1*) however, argues that 'anyone can be an expert'. In supporting his opinion, *thfc1* provides a sceptical appreciation that expertise can be claimed based on (one's own) subjective assessment of (one's own) knowledge ('I could say I know a lot about the internet and claim to be an expert [about the internet]). Again however, this is more likely a criticism of false claims to expertise, rather than a denial of the reality of expertise *per se*. Nevertheless, it does reveal an appreciation that 'expertise' has a subjective quality and has to be conferred by someone (even if that someone is oneself).

alanne on the other hand, is sceptical more so of the way in which 'expertise' is presented in the Citizens' POLIS. As noted (see Chapter 5) all stakeholders, including activists and industry representatives, are equally presented as 'experts', along with the scientists. She takes issue with this by developing Dexter's suggestion that 'to be an expert you need experience' with that particular issue. For *alanne*, an 'expert' is specifically someone who has 'studied' a lot of 'evidence' on their specialism. This definition however, relies on two assumptions: Firstly, it begs the question 'what is "evidence?"', a point we will return to shortly. Secondly, it also begs the question of

'what does it mean to "study" evidence?' On *alanne's* definition, we might see activists and the mobile telephone industry representatives as being 'experts' also. During the Stage 1 stakeholder interviews, it became clear to the researcher that the activists and the industry representatives also had a good understanding of the scientific concepts underlying the debate concerning MTRH, and had obviously read a considerable amount of literature on it. This would presumably have been apparent to the citizens also, since in the evidence they were provided, multiple references were made by both the activists and the industry representatives to their reading of the scientific literature. One can ask however, whether it is the same thing to read the scientific literature as it is to 'study' the scientific literature? According to the citizens, this is where the role of credentials and qualifications plays a part. Whilst the activists and, to a lesser extent the industry representatives, possess few qualifications, at least not necessarily related to their involvement in this issue, the scientists are of course heavily credentialed, with qualifications stemming from their involvement in this issue, e.g. a PhD in specialising in EMF physics). Looking further at this passage of deliberation, it becomes clear that in talking of 'evidence' and 'experience', the participants have in mind a particular type or interpretation of these terms:

> <Evefant> and experience in the right area
>
> <Dexter the Blade> Yeah
>
> <Dexter the Blade> Scientific, usually ... this is a science-based issue, therefore a science background in that subject would probably be appropriate

When *Dexter* talks of 'experience' being constitutive of 'expertise' he is not referring to the type of experience that an activist might have through their countless hours campaigning against mobile telephone masts or a EHS sufferer might have in experiencing symptoms which they attribute to mobile telephone EMFs. Nor is *Dexter* referring to the type of expertise which an industry representative might have from working with the technology and in implementing and monitoring their regulation for example. Rather, *Dexter* is specifically referring to 'scientific experience'. He cites the fact that it is a 'science-based issue' as the reason as to why this is the relevant form of expertise. These views relate to, but are arguably more fundamental than, those discussed above under the subject of trust and credibility. It was noted above how the participants generally saw the scientists' evidence as the most credible and trustworthy

evidence. Here however, the participants go a step further, in implying that the scientists' views are to be seen as the only form of relevant evidence – indeed as the only source of evidence at all. Although they were presented symmetrically with the scientists' contributions, the citizens generally declined to acknowledge the activists' contributions as 'evidence', at least in the same way as they considered the scientists' contributions as evidence:

> <moderator> what about the activists?
>
> <lovecraft> once again, no 'evidence' from them, just hearsay
>
> <Evefant> I don't think they're that interested in evidence
>
> <Evefant> My first impulse is to say that they are not that well educated
>
> .

It is clear then, that a number of the participants specifically equate evidence with scientific expertise, and that information which the activists provide is (somewhat perjoratively) dismissed as anecdotal 'hearsay'. According to *Evefant,* the activists neither provide evidence, nor do they cite what she feels is genuine evidence. In this sense, the significance of anecdotal evidence (or 'public science'), as discussed by Stilgoe (2005, 2007; Moore and Stilgoe, 2009) is disregarded by the citizens in the Citizens' POLIS. More damning still she questions that their beliefs reveal a lack of education. Of course, this certainly cannot be taken as being representative of the views of the citizens as a whole. No other citizens explicitly expressed this view neither did they agree with *Evefant* on this point. The point is however worth noting because it further suggests the participants equation of expertise with credentials (i.e. formalised education). Some participants however, spoke more favourably of the activists' position:

> <cookiemonster> I dont [sic] want to say the 'for' group, but only because they actually HAVE evidence... the against group doesn't, they only doubt or find flaws in the 'for' evidence

cookiemonster's opinion is particularly interesting as it appears to suggest that she would like to side with the activists (i.e. the 'against' [mobile telephones] group) – perhaps a sympathetic reaction to the sensitive content of their interview material – but

that she feels as though she cannot, because they do not have any evidence to convince her of the truth of their claims. When asked why she felt she couldn't believe the activists, despite 'wanting' to, *cookiemonster* suggested, rather interestingly, that it was because they are easier to relate to:

> <cookiemonster> maybe because its coming from someone we can relate to? ... I think maybe we look at evidence difference because it comes from people that are either more like us, or less like us.

We might infer here that sometimes being able to relate to someone doesn't necessarily mean that their arguments are rendered more persuasive. In this instance it is quite the opposite – scientists are seen to be authoritative because they are not seen as easy to relate to; because of their 'otherness'. Activists on the other hand, because they are seen as being 'more like us', despite gaining our sympathy, do not gain our belief necessarily.

As sociologists of science, we might see the participants' views as being implicitly positivist in the way they view science (and knowledge more generally). This of course is not unexpected. Despite there being a well-reported lack of trust in governmental scientific institutions, particularly in the UK post-BSE (although findings discussed in Chapter 7 suggest trust may have been rebuilt somewhat), trust in science and scientists as such, has never been challenged (Pidgeon, 2009). It appears then, as though the boundaries that scientists put between them and non-scientists (Gieryn, 1983) still hold strong despite recent threats to science-based policymaking. In the Citizens' POLIS, the participants reproduce scientists' boundary work, in referring to the expert 'otherness' of scientists, and the inexpert 'sameness' of other actors such as the activists.

The point to be reiterated then, is that the citizens' arguments appear to rest on a simple equation between evidence as expertise and expertise as knowledge and experience and knowledge and experience as science (in relation to 'scientific issues' at least). The implication to this research then, is that from the point of view of the citizens themselves, the primary type of information, or 'evidence', the participants should receive in participation processes (such as the Citizens' POLIS) in order to help them make decisions is information from scientists. The above passages of deliberation show that the participants' interpretation of expertise as scientific experience – experience which is symbolised by their scientific credentials - appears to leave no room for the

kinds of 'alternative expertises' which are increasingly being identified, within STS at least, as relevant to S&T decision-making (e.g. Epstein, 1996; Wynne, 1985) and medical decision-making (Faulkner, 2006, Popay and Williams, 1996, Prior, 2003, Williams and Popay, 1994), particularly in areas where scientific knowledge is uncertain and *explicitly* value-laden.[76]

One final interesting observation to be made about this passage of deliberation is that it provides a typical example of the capacity of deliberation to change individuals' views - something which will be discussed in more detail in Chapter 9. It can be seen that *thfc1* becomes persuaded by the other participants that 'expertise' is 'real' and specific in nature:

> <thfc1> Yes, I agree you would have to have some knowledge on the issue ... [and] well I guess the best way to learn is to experience, and maybe it is that they ['experts'] have the qualifications and letters with there [sic] names
>
> <thfc1> u need both I guess

Despite this initial conviction, *thfc1* appears to be convinced by his fellow participants (*Dexter* and *alanne*) that actually not just 'anyone can be an expert'. Rather he now seems to take their view that to be an expert requires a certain type of knowledge on the issue in question, and further, that this knowledge is acquired through experience and is symbolised by the credentials which those who posses this experience have also acquired. Although he does not explicitly make the equation between 'expertise' and 'science' as clearly as did some of his fellow participants, in mentioning the importance of credentials, *thfc1* nevertheless implies it.

[76] Esptein's (1996) study of AIDS Activists in the US and Wynne's (1985) study of Cumbrian sheepfarmers are classic examples of 'alternative expertise'. Epstein (1996) showed how AIDS activists were able to engage with scientists in a meaningful way and to actively interpret scientific research (based on their embodied experience of living with the disease) in order to influence AIDS research policy. Wynne's (1985) analysis argued that the sheepfarmer's local knowledge of the Cumbrian terrain should have been taken into consideration in addition to the advice of 'traditional', scientific experts in order to provide a more effective response to the Windscale nuclear disaster. Williams and Popay (1994; Popay and Williams, 1996) have discussed how 'lay knowledge' as a type of alternative expertise, is an important resource for medical and public health decision-making.

8.4. Conclusions

It was found that participants in the Citizens' POLIS were keen to discuss perceived risk – or rather the perceived absence of risk - concerning mobile telephones, in terms of their wider approaches to risk and risk-taking or risk-avoidance. 'Risk' was seen to be a relative concept, depending on the particular individual's general attitude towards it and their identification as risk-conscious or risk-ignorant. It was found however, that participants were, through deliberation, able to compromise to settle on an interpretation of risk which was more moderate than either extremes (of risk-averse or laissez-faire). Such findings conflict with theories such as group polarisation, to suggest that deliberation can allow for more moderate as well as more extreme group decisions to be made.

The findings also suggest that, following deliberation, there is a negative relationship between risk and benefit – that is the greater the perceived benefit, the smaller the perceived risk. This suggests that such a relationship is not solely a result of individual reasoning or the affect heuristic. It was found also that, contrary to the affect heuristic, the more 'dreaded' issues, such as cancer, did not necessarily generate the most concern. Finally, since the citizens concluded that there was 'little cause for concern', the SARF was found to be of little use. In the Citizens' POLIS, the citizens found the views of scientists more persuasive, thereby siding with the scientific mainstream that there is little cause for concern based on existing evidence.

Whilst it is not denied that in some instances precautionary advice can create concern rather than assuage it (as argued in the literature), in the Citizens' POLIS on MTRH this was not the case. It was found that, if anything precautionary advice further alleviated the citizens concerns. It has been suggested that this might highlight the possible differences between public perception of 'precaution' in an individual context and the conception of risk in a deliberative context. It was also noted that citizens, like academic commentators, are unable to provide a general definition of 'precaution'. In the Citizens' POLIS on MTRH, participants initially offered a traditional, 'costs versus benefits' definition, before qualifying this by highlighting the fact some risks will always be unquantifiable and random. In focusing on 'caution' over 'pre-caution', the participants argued that it is more important to first focus on known risks (e.g. crossing the road) than unknown risks (e.g. mobile telephones). Finally, data from the Citizens' POLIS suggests that taking precautions, and the

choice of whether to do so, lies with the individual rather than with government or society in general.

In discussing the role of expertise in science and technology decision-making, participants in the Citizens' POLIS first discussed what was understood by 'expertise'. Some participants initially appeared sceptical and used inverted commas whenever they referred to 'experts'. However, it is suggested that this most likely suggests scepticism concerning specific (in their opinion, false) claims to expertise, rather than scepticism concern whether expertise exists and is useful *per se.* In attempting to define 'expertise', the citizens pointed to the roles of credentials and experience. In referring to experience however, it was found that the majority of participants implied scientific experience.

The participants generally saw scientists as experts and non-scientists as inexpert. Some participants went further to equate evidence with expertise. The implication of this is that whilst the scientists' views and arguments were considered 'evidence', the activists' views and arguments were negatively viewed as 'hearsay'. Some participants however, implied that they would like to believe the anti-mobile telephone activists, but that they weren't able to because they felt this group didn't have 'evidence'. Another reason for this was that the activists were easier to relate to than the scientists, which in turn reduced the authority of their arguments. The citizens thereby reproduced the boundaries between the 'otherness' of scientists and the 'sameness' of non-scientists.

Chapter 9: Methodological findings - was the *Citizens' POLIS* a 'good' public participation process?

The aim of this chapter is to answer the broad question of whether or not the Citizens' POLIS can be considered a 'good' public participation process. To do so, this section will refer back to the literature on public participation and deliberative democracy, as discussed in Chapter 3. Analysis of this literature focused on four main characteristics or capacities of 'good' deliberation: the capacity of a participation process to *inform* the participants' contributions to the deliberation; the capacity of deliberation to allow participants' views to undergo *change* within the process; the existence of a *cooperative* approach to deliberation; and the existence of *reasoned* argumentation within deliberation. These features are theoretically sound. They are as the pragmatists might say good *ideas*. However, as we saw in Chapter 2, according to Dewey (1991/1927: 217), theory (intellectual method) alone means nothing without their reification in, and verification through, empirical data (practical procedure). For these good ideas to be given value they must 'pass into actions' (Dewey, 1929: 128); to know whether the Citizens' POLIS is a 'good' participation process we can therefore 'test' these theoretical criteria in light of our empirical data. The following sections will discuss these criteria in turn, to see if they can be applied to the Citizens' POLIS. This chapter will then conclude with a separate discussion of the citizens' views on the Citizens' POLIS as specifically an *electronic* public participation process.

9.1. Did the participation process *inform* citizens' views?

In Chapter 3, it was argued that for citizens to play a meaningful role in decision-making, it is necessary that their deliberations are suitably informed (Rowe and Frewer, 2000). In Chapter 4, it was argued that, one of the main differences between a public participation process and a public consultation process is that the former does not simply seek to 'elicit' the existing opinion of public representatives, but it instead creates informed opinion. We also saw how public participation processes were distinguished from public communication processes in that in the former unlike in the latter, this informed opinion was created through deliberation and dialogue *between* scientific and political institutions and the public representatives, rather than through the downward dissemination of information from institutions to publics (Rowe and Frewer,

2005). The task of this section then, is to discuss whether in the Citizens' POLIS, the citizens' deliberations suggest the extent to which they felt they were informed by the Citizens' POLIS process. In looking to the data for instances of the participants' own reflexive assessments of the process and in particular it informational capacities – i.e. whether *they* feel they have learned something by taking part.

Some citizens suggested that even the most basic level of information was necessary, since they had previously known very little about the issue at all:

> <moderator> so are you concerned about mobile phone masts?
>
> <Evefant> I didn't really know they [mobile phone masts] existed before :S [embarrassed face]

Evefant suggests here that despite the ubiquity of mobile telephone use, knowledge of their technical workings is not ubiquitous. However, the 'emoticon' at the end of her sentence [:S] is used to highlight her embarrassment at not knowing what she perceives to be common knowledge. In making this confession she does however imply that participating in the process means she now knows that mobile telephone masts do exist. There were other references within the deliberation to the fact that the participants role in the Citizens' POLIS was bringing them into contact with knowledge which they might otherwise not have acquired. *thfc1* for example, suggested that his girlfriend (gf) represents 'many people' in not knowing what electromagnetic fields are and therefore the basics behind how mobile telecommunication technology works. The Citizens' POLIS then can be seen as an informative environment within which participants acquired technical knowledge through their analysis and discussion of the evidence.

Some participants also suggested that their participation the Citizens' POLIS constituted their first engagement with the issue of MTRH:

> <alanne> I hadn't received a lot about this issue personally prior to this

Interested by this lack of basic knowledge and engagement, the moderator probed to see whether participants were aware of whether they lived near a mobile telephone base station. The aim of this question was to see whether the participants, on an everyday

level, had given any thought to one of the major issues of public concern – that is, base station siting:

> <moderator> does anyone live, or know whether they live near a mobile phone mast?
>
> <alanne> I do now but I didn't know before I was asked for this research

alanne's response suggests that not only did the participation process serve to inform the citizens about basic technical aspects of the functioning of the technology, but that in some cases it also served to prompt participants to discover information for themselves about how the technology, and in particular debates on risk and health, might relate to their everyday lives. *alanne* states that whilst she was previously unaware as to whether or not she lived near to a base station, taking part in the *Citizens' POLIS* encouraged her to find out this information for herself.

It was suggested also that the information provided to the citizens in the Citizens' POLIS allowed them to 'back up' their views:

> <alanne> I feel I have some knowledge to back up my views

Here *alanne* implies that participation affords a certain confidence; a confidence that one's views are backed up by relevant knowledge. It suggests that *alanne* might otherwise not be so confident in voicing her opinions on the issue, were she not to have been provided with access to such knowledge. The citizens also discussed the importance of being given 'both sides of the debate':

> <Evefant> i think it would be great to be given both sides of things more often, like here
>
> <Spike> agreed
>
> <Evefant> i think it would've been really hard to find arguments for both sides without the evidence page...
>
> <Dexter the Blade> It is nice to have the option of viewing both sides.
>
> <thfc1> definitely [*sic*]

Evefant, Spike, Dexter and *thfc1* suggest that in any debate in which citizens are to be involved, such as those institutionalised in public participation processes, it is necessary for them to have access to both 'sides' of the debate (or presumably all sides in cases where there a debate has more than two clear 'sides'). This shows that the participants agree that a balanced presentation of the evidence is a prerequisite for public participation processes. Moreover, their arguments help to validate the importance of having an intermediary involved in the organisation of the process, in particular in collecting and producing balanced evidence. As *Evefant* suggests, finding arguments which support both (or all) sides of a debate is not necessarily a straightforward task. This passage of deliberation stemmed from earlier discussions on the issue of trust in government (see Chapter 7.2.7.). The participants were asked whether they felt that they received enough information from the government. The idea was to see whether, in the citizens' opinion, government was transparent and open (to which it frequently lays claim, pos-BSE crisis). As was suggested in chapter 7.2.7., the participants generally trusted that government would act in their interests, but that information provision was unsatisfactory. As such, the participants considered public participation processes to be a desirable supplement to existing forms of political public engagement. However, whilst all participants argued that governments should be open and accountable in matters concerning public policy, some offered the caveat that in practice this might not necessarily be successful or worthwhile:

> <moderator> as a system - do they provide us ('the public') with enough information about matters such as this one [i.e. MTRH]?
>
> <Dexter the Blade> Not really... but in all honesty, we probably wouldn't understand a lot of it if they gave us more info
>
> <alanne> there should be more advisory leaflets, but aren't there supposed to be? Not that most of them would not be discarded.
>
> <Dexter the Blade> Not to say that we shouldn't be given more ... [but] how often people would take the time to read things, who knows

Dexter suggests that simply 'giving' people information might be insufficient. Firstly, he suggests that members of the public probably wouldn't 'understand' a lot of the technical information they would be given. Secondly, and more fundamentally, he suggests that people might not even have time - or would not choose to make time - to

digest this information in the first instance. *Dexter* also questions the ability of laypersons to 'understand' technical information. It is important to emphasise that this is a very different argument to the one made by the author of this thesis, that citizens in a public participation process need to be informed on the debate in order to enter into meaningful deliberation. This argument simply entails that the participants are given access to a wide range of evidence from a wide range of stakeholders, in order for them to interpret it as they see fit, so as to form opinions and draw conclusions. This includes technical information, which is also seen as being open to interpretation and challenge within the deliberation. *Dexter*'s argument, on the other hand, seems to imply that there are only two ways of interpreting the technical information given to them (i.e. understanding or misunderstanding) and that the public are prone to misunderstanding such information (cf. Irwin and Wynne, 1996). This relates to earlier argument, in Chapter 8.3, which saw the participants as reproducing boundaries between scientists and non-scientists. It has already been suggested in this chapter that the participants welcomed basic technical information about the issue – in this case the workings of mobile telecommunication technology. However, based on *Dexter*'s view above, one might ask as to exactly how technical information can realistically be for members of the public to be comfortable with it. *Dexter* is of course referring to public engagement in general. The question of 'how technical is too technical' is a question which applies also to the citizens in public participation processes.

Another consideration the above passage of deliberation raises is that of 'over-informing' participants. *Dexter* confirms there is a danger of 'over-informing' as well as under-informing participants (cf. Rowe and Frewer, 2000; see also Chapter 3.2.1 and Chapter 5). A more serious charge is made perhaps, is if we are to interpret *Dexter* and *alanne's* view as one of a public that are apathetic. He questions whether people would actually take the time to participate voluntarily in political decision-making by voluntarily reading information provided for them by government. These critical yet candid opinions do not paint 'the public' in a particularly favourable light, and certainly fail to paint them as a group of active, scientifically aware citizens who *want* to participate. The participants did however ground this passage of deliberation in terms of a more positive argument, namely that there is room for, and a role to be played by, orchestrated public participation processes like the Citizens' POLIS.

9.2. Did the participation process allow citizens' to *change* their views?

It is important to note that whilst a public participation process should allow for citizens' views to undergo transformation during deliberation, it is certainly not required that they do so. Deliberation, as has been discussed in Chapter 3.2.2., must proceed on the assumption that participants are *willing* to change their views according to the force of the better (that is better reasoned) argument, in which the better argument is normatively agreed upon within the deliberation itself). This section will discuss whether the data suggests that participants' views changed in the Citizens' POLIS, or whether at least participants appeared willing to change their views (according to the force of the better reasoned argument).

It was suggested by some participants that the experience of participation would lead them to be more interested in the issue in future, insofar as they would 'take more notice' of information related to that issue.

> <alanne> I would take more notice of research/reported stories now though, to see if we are proved wrong

alanne's claim is interesting since it suggests a difference between pre- and post-participatory individuals, not only in terms of their knowledge of the issue as discussed in the previous section), but also in terms of a new-found interest and involvement in the issue. It suggests that, rather than it being a one-off process, participation is actually the beginning of a citizens' involvement in the issue. This brings to mind Dewey's suggestion that it is their engagement with an issue which brings a public to life (see Chapter 2.2). In the Citizens' POLIS of course, this engagement with the issue is not organic, but it is an engagement nonetheless. We might reiterate our earlier argument then (in Chapter 2.2.) that 'a public' is sparked into life within the Citizens' POLIS around the issue of MTRH. As *alanne* seems to suggest above, the citizens' engagement with the issue of MTRH does not necessarily end when the Citizens' POLIS on MTRH ends.

On a number of occasions during the deliberation, participants noted how their views had been affected by the evidence that they received. As discussed in Chapter 7.2.1., participants concluded overall that after engaging with the evidence they were 'not overly concerned' by the issue of MTRH. Most participants noted that their engagement with the evidence had served to *lessen* their level of concern:

> <littlered> I was less concerned after reading the info etc than I was before
>
> <alanne> after reading more information I now think that there is much less risk from masts than phones

One participant did state however that, despite also concluding that she was not overly concerned, her engagement with the evidence had served to *increase* their level of concern:

> <Evefant> I'm more concerned after reading this information... but no, not really

Participants were not reluctant therefore to admit that their views had changed during the participation process. The above quotes suggest however that it was the participants' engagement with the evidence *per se* rather than their deliberation on the evidence as such which led to the change in viewpoint. However, it is also possible to see in the data suggestion that the act of deliberation itself was also able to facilitate changes in the participants' viewpoints.

The final deliberation session was preceded by a task. To recap, the participants were asked to hypothetically allocate a sum of money (£90 million) and to distribute it amongst the sub-areas of research previously discussed (i.e. masts, biological effects, cancer and EHS). They were asked for their individual decisions before the final deliberation session, and were asked for a joint decision *if they so wished* to be made during the final deliberation session. The citizens' final decision was given in Chapter 7 (in the one-page results summary). In reaching this decisions however, the citizens showed the potential of participation processes to foster cooperative inquiry (as discussed in the following section) but how within this individual participants needed to change their original decisions. Indeed, because the final figures are different from each

participant's independent figures, then those who agreed to the final figures (*alanne, cookiemonster, Dexter, littlered* and *Spike*) all must have changed their views in order to arrive at this shared decision. How they came to this decision is discussed in the following section.

Not all participants however were willing to change their decision. The following suggests that changing or compromising one's view cannot be expected in deliberative exercises. Provided they are convinced that their original viewpoint is still the best reasoned, participants in deliberation are of course justified in sticking to it. *thfc* is a good example of how participants can stay resolute to their original, pre-deliberative viewpoint:

> <thfc1> keep mine as original answers mod ... thks [thanks]
> <thfc1> mods got mine as I wont [*sic*] change my mind

Of course the problem here is that *thfc1* does not justify himself in his decision not to change his view. *thfc1* makes no attempt to re-substantiate his decision, and simply states that his decision is final *tout court.* This reluctance (or inability) to reason one's decision, as will be discussed below (Chapter 9.4), is not characteristic of good deliberation.

More interesting than looking at how participation processes can change individuals' views is looking at how they can change individuals' actions and behaviours. At one point in the deliberation, *cookiemonster* spoke of an article she had read which discussed possible detrimental effects that mobile telephone radiation could have on sleep quality.
In response, *thfc1* mentioned to the group that he went to sleep at night with a mobile telephone under his pillow:

> <cookiemonster> they emitt [*sic*] electrical impulses too which disrupt sleep wave patterns if its' close to your head ... I only read a short article.
>
> <thfc1> cookie when i go to bed i have my mobile under my pillow so i can use the alarm and i have only been doing this in the past year and i have been having sleep problems...

<alanne> sounds like a bad idea thfc

<thfc1> so it could be true what u say no more mobile under my pillow from now on!

<thfc1> lets see if its true will let u know

thfc1 changed his behaviour of going to sleep with a mobile telephone under his pillow, following a line of inquiry in which concerns were raised as to whether or not the EMF radiation they emit can (adversely) impact on a person's sleep. His is testament to how participation has the potential to change individuals' actions and behaviours as well as their viewpoints. It is important to point out however, that the acquisition of new knowledge through participation does not necessarily lead to a change in actions and behaviours - just as it does not necessarily lead to a change in views. In some cases, participation can serve to reinforce people's existing behaviours. *Dexter* for example was consistent in stating that he was 'not overly concerned' by mobile telecommunication technology in relation to their possible risks to health. Unconvinced by the suggestion that mobile telephones might have detrimental effects on sleep quality, he seemed undeterred in his practice of sleeping next to his mobile telephone:

<Dexter the Blade> I slept with it right next to me for years and I see no problem with it, but then again as was said - everyone may react differently.

Just as *Dexter* suggests that different people react differently (in a biological sense) to mobile telephone radiation, so to it seems that different people may react differently in terms of their viewpoint) to this new evidence proposed by *cookiemonster.* Whilst *thfc1* was concerned enough to change his behaviour, and whilst *Dexter* was unconcerned enough not to, *Spike's* reaction was somewhere between the two:

<Spike> i also sleep with it next to me but don't seem to have problems ... this has made me think twice bout that tho [*sic*]!

9.3. Was the deliberation *cooperative*?

According to James Bohman (1999), an important quality of deliberation is its ability to foster *cooperative* inquiry (see chapter 3.2.3.). Although Bohman's work is partly influenced by Habermas' ideas, it does not go as far as to suggest that consensus is a

necessary outcome of ideal deliberation. Instead, it suggests that ideally participants should cooperate and work towards a mutually satisfactory resolution to the deliberation. Being thoroughly Pragmatist, Bohman recommends that deliberation is driven by reasons that all *do* accept, rather than (as is more common) by reasons that all could accept. This section will discuss whether the deliberation may be considered cooperative or not.

One way of discussing whether or not the participants might be considered cooperative is by looking at whether there was evidence within the deliberation of a group identity. (see also Chapter 9.5.). There are examples within the data of instances in which participants clearly displayed a sense of cohesiveness, and often refer to themselves as a collective ('us', 'we' etc). This was best illustrated during one of the deliberation sessions when one participant (*cookiemonster*) lost connection with the chatroom, and had to re-enter with a new temporary username (*about2shout*). The other participants' responses suggest that they felt comfortable with the existing, established group members, and were somewhat hostile to what they thought was a newcomer (whom they appeared to perceive as an 'outsider'). Without digressing too much, the point to be made here is that a shared group identity is a prerequisite, or rather a corollary of, a cooperative approach to any task – in this case the deliberation of a science and technology issue. This scenario is perhaps best illustrated through the passage of deliberation itself:

> [21:18:31 GMT] about2shout [enters chatroom]
>
> <thfc1> whos this
>
> <Spike> who is this?!
>
> <alanne> I dunno
>
> <lovecraft> gatecrasher?!?
>
> <about2shout> hi everyone its cookie
>
> <Dexter the Blade> ah i see
>
> <about2shout> sorry
>
> <Dexter the Blade> thought we'd lost you then lol

<thfc1> hello cookie what's with the name change
<about2shout> I got kicked off [the chatroom] i kept on trying... for some reason it worked when I used a new name

<thfc1> ohhh

<alanne> like the new name

<about2shout> thanks - so, where r we?

Another way of discussing whether or not the participants might be considered cooperative is by looking at the data to see the extent to which the deliberation was to see whether the deliberation was characterised primarily by affirmative (encouraging) remarks from over negative (discouraging) remarks. Indeed, the deliberation was replete with positive responses, a small sample of which is offered below:

<Dexter the Blade> It is certainly a viable point of view

<Dexter the Blade> Agreed, alanne

<thfc1> i agree spike

<littlered> good point dexter

<cookiemonster6> oh defo i agree

Of course, as has been well noted, whilst deliberation can proceed on the basis that it is working toward consensus and agreement, this is not to say that it must be at all times consensual and agreeable. As Cohen (1997a) although consensus can be considered an ideal outcome, there are numberous practical difficulties in a complex and plural society and it should therefore not be a requirement of 'good' deliberation (Christiano, 1997; Estlund, 1997; Gaus, 1997; Knight and Johnson, 1997; Rawls, 1993). In order to reach a consensual, or at least mutually satisfactory, conclusion, deliberation might along the way encounter, and need to overcome, disagreement. It is the participants' willingness to at least attempt to overcome disagreement which distinguishes deliberation from other forms of political discussion or argument. In the *Citizens' POLIS,* there were many instances during deliberation in which the participants disagreed over something. An example can be drawn from the participants' discussion of the rather contentious issue concerning the extent to which EHS should be considered a 'physical' condition

and the extent to which it should be considered a 'psychological' condition. During this line of inquiry, when discussing the issue of EHS, *thfc1* disagreed with *alanne*'s suggestion that the psychological dimension to a person's (ill) health should be taken into account:

> <alanne> you have to help people with psychological problems, they are often worse than physical ones
>
> <Evefant> i agree with alanne, if you can help them with the psychological problems it will probably be cheaper too...
>
> <thfc1> don't agree

The above passage of deliberation shows how a given statement, particularly a contentious one, can evoke both agreement and disagreement amongst the participants. It also shows clearly the difference between a reasoned and an unreasoned argument. *Evefant* substantiates her statement by adding that treating the psychological dimension of (ill) health (in her opinion) might be cheaper than treating the physical dimension. *thfc1* however (as was also the case in Chapter 9.2. above), again fails to account for his disagreement. However, as Mouffe (2000) has argued, democracy must include room for disagreement and *modi vivendi.*

The final discussion, in which the citizens were asked to hypothetically allocate £90 million, can also help us to determine whether or not they were cooperative within the deliberation. As discussed previously (see substantive results section), the participants were at end of the final deliberation hypothetically asked how they would distribute £90 of funding across the various areas which had been previously discussed (i.e. research or practice in relation to: base stations, biological effects, cancer, EHS and the precautionary principle). This task was set to explore two things. Firstly, it sought to explore whether individual participants' views underwent a change in and through deliberation (see above). Secondly, since it had already been found that participants individually had different views as to how best to allocate this funding, this task sought to explore whether and how participants were able to work cooperatively in reaching, through deliberation, a mutually satisfactory solution to the problem. The following passage of deliberation is indicative of how the participants worked to reach a decision:

<alanne> I would be happy to up my 30 to 35

<Dexter the Blade> but I'm flexible on base stations to bump it up to 15 ... and drop EHS to 5

<cookiemonster> should we have an 'other' category?

<Dexter the Blade> Like a little piggy bank

<cookiemonster> lol ... yes

This passage of deliberation shows how the participants are willing to compromise in order to reach a collective decision in regard to the allocation of funding. One attempt to find a solution is to suggest an additional category (not provided by the researcher). *cookiemonster* suggests using an 'other' category, which is felt might help resolve the issue of 'leftover' funding. *alanne* and *Dexter* both show their willingness to modify their individual decisions.

The question of course, is whether or not this compromise is driven by the force of the better (reasoned) argument or by the fact that participants perceive that they feel obliged to come to a consensual decision in order for participation to be considered successful. In respect to this, it is important to emphasise that at the moderator at no point requested or instructed the citizens to come to a consensual decision. They were only asked to discuss their individual decisions and work towards some form of conclusion (whether this be a consensual decision, a *Modus Vivendi,* or an open-ended conclusion). It was the citizens themselves who emphasised the need to reach a final, consensual decision on the hypothetical resource allocation task:

<moderator> ok, as it is now half past you are free to go

<alanne> we've not spent our money yet

<moderator> i dont want anyone to miss any commitments they may have etc

<Dexter the Blade> we've been here this long thinking, we may as well see this to the end ☺

<Evefant> don't want to let the cash go to waste ☺

<Dexter the Blade> Yeah, thanks anyway moderator ... lets tie this all up

<alanne> yes, we will have to agree quicker

This passage of deliberation shows two things. Firstly, it suggests that the citizens took their roles seriously.[77] The citizens are seen to exhibit a sense of 'civic pride' (see Chapter 3.2.3.). Although, as discussed in Chapters 5.1., participants for the Citizens' POLIS were only forthcoming after an honorarium was offered, the fact that a number of them decided to stay longer than the time for which they were being compensated, suggests they took to their role seriously. The fact that the latter deliberation sessions lasted longer than the average (and again beyond the suggested 1.5. hours) also suggests that they took to their role.[78] The fact that they wanted a resolution also suggests that generally the task was something that was – or at least became – important to them, and was therefore worth completing. Secondly, this passage of deliberation also shows that the participants were determined to reach an agreement. They had, for approximately the past half hour been discussing how best to hypothetically allocate their £90 million. Given that the time allocated for deliberation (or rather the time for which participants it was agreed would be compensated for) had elapsed, the researcher informed the participants that they could leave the synchronous discussion room. The participants however wished to draw some form of a conclusion or final decision, instead of leaving things open. The statements from *alanne, Dexter and Evefant* all show this commitment to reaching a decision; to 'tying things up'. A viable option would have been to reach a *Modus Vivendi,* in which the participants 'agreed to disagree'. This would have suggested that 'tying things up' does not necessarily equate to reaching a consensus. However, the final statement is telling in that it is assumed that they must agree in order to consider the deliberation fully tied up.

Although the citizens sought to convince each other through the use of reasoned argumentation (see also the following section), arriving at a mutually satisfactory

[77] See also Chapter 5 for a discussion of how the participants did only what was required of them in terms of their role. There are suggestions here that they took the role seriously, but were not always proactive beyond doing what was required of them.

[78] There were however indications from some participants that their role or the process didn't require 100% commitment. One anecdote indicating this was *thfc1*'s admission that during one deliberation session, he was 'half watching' his favourite team, Tottenham Hotspur FC (the inspiration behind his moniker!), on the television at the same time as 'participating' in the process. This of course also might be seen as a limitation to using text-only CMC - unlike a FtF participation process, this type of remote participation allows for distraction. It is necessary to rely on participants committing their attention entirely to the process, rather than requiring them to (as is the case in FtF processes). This in itself however is more in line with democracy and citizens participating under their own terms. That said, the majority of participants did appear to give the exercise their full attention at all times (as far as it is possible to know without Av technology being used).

decision proved problematic. It is interesting that, in order to 'tie things up', participants felt that recourse to quantitative means was necessary. The participants suggested that taking an average (or each participant's different individual amounts) was the best solution. This proposal was first made by *Evefant,* but agreed to by most of the other participants:

> <alanne> I agree with Evefant, I think we would be ready to accept an average now though
>
> <cookiemonster> im happy to
>
> <alanne> Averge seems to be about 26.6
>
> <Dexter the Blade> I think an average is a decent short term solution ... So that people don't just get tired of it and agree to just anything

As was noted previously (Chapter 9.2.), *thfc1* was unwilling to change his views in order to reach a consensual decision. To refuse to do so *tout court*, without providing the reasons for this refusal, was not characteristic of good deliberation. As such, to his fellow citizens, *thfc1*'s unwillingness to change his views might just as easily be due to his unwillingness to participate in cooperative deliberation in the first place. We might see this as more plausible when we observe that *thfc1* was also unwilling to take an average in order to reach a collective decision, despite the fact that the other participants had agreed to it:

> <thfc1> Average? never ...

The role of reason within deliberation will be discussed in more depth in the following section. However, *thfc1* helps to illustrate the importance of explicit reasoning to the deliberative process precisely in his failure to use it. This experience shows us that it is never possible to take for granted that consensual decisions are inevitable or even that all participants will work cooperatively.

In contrast to *thfc1*'s stance, some participants were happy to admit that they were influenced by the other participants in deliberation, and moreover that this was not a negative thing:

<Evefant> i feel really influenced by what you other guys think - and I'm not ashamed of that ☺

<Dexter the Blade> Likewise Evefant ☺

<Dexter the Blade> I think it is a good thing that we are

<alanne> that is the point of groups I guess

This follows from earlier discussion, in Chapter 9.2., which saw that on the whole, participants were willing to change their views based on the arguments of their fellow participants. Here *alanne* goes as far as suggesting that the very purpose of group deliberation is to create an environment within which an individual's own view can undergo a transformation in light of the arguments made by fellow participants. This attitude embodies a cooperative approach to deliberation. That is, the participants (or at least most of the participants) were able not only able to accept that their views might be influenced by others, but were willing to positively embrace this possibility.

This passage of deliberation took place towards the end of the final deliberation session. The moderator was interested as to whether the participants felt that this openness to being influenced by others was something that they had acquired during the deliberation, or whether it was rather something they possessed inherently, from the start:

<moderator> do you think you would have been so influenced right at the start of discussion one?

<Evefant> not at all

<alanne> Yes, now it doesn't mean we have changed our minds, just the way to agree a way forward

<Evefant> cause then we were all beginners and didn't know much

Evefant suggests that the participants' willingness to change their views in light of the arguments of others was not something which they inherently 'brought to' the deliberation. Rather, participating in deliberation itself appeared to encourage participants to adopt a more open and cooperative attitude. *alanne* agreed with this view, but qualified it by noting that it does not necessarily suggest that the participants

have changed their mind *per se,* but rather that they have changed their approach to how best to reach a decision. This point ties us back to earlier discussion, which noted how the participants emphasised the need to reach a final, consensual decision. *alanne*'s statement confirms the importance of cooperation in deliberation, and suggests that progress can be equates with consensus which in turn agreement which in turn equates to a willingness to changing individual views in light of the arguments of others. In arguing that participants became more willing to have the views transformed during deliberation, *Evefant* also notes the need for deliberation to be informed (see also Chapter 9.1.). She seems to suggest that the more informed the participants become during and through their participation, the more they are able to propose arguments which are well-supported, and which are therefore more convincing to their fellow participants. The idea that views need to be reasoned (i.e. well-supported) to be convincing will now be explored in more detail.

9.4. Was the deliberation *reasoned*?

As discussed in Chapter 3.2.4., most deliberative democracy theorists agree that one of the definitive criteria of deliberation is that it is 'reasoned' - even if they do not necessarily agree over what exactly it is to be 'reasoned'. We might take a reasoned argument as one in which an attempt is made to account for, substantiate or justify that argument. Broader still, we might take a reasoned argument to be one in which an attempt is made simply to explain w*hy* one feels a certain way. Either way, we are able to see numerous examples of reasoned argumentation within the Citizens' POLIS. A good example of this can be drawn from the participants' hypothetical funding allocation exercise. As noted above (Chapter 9.2.), participants at times held quite different views as to how the money should be distributed. At the same time, as we have seen, the participants also felt - without being prompted by the moderator - that to reach a decision meant to agree on fixed amounts and consensual allocations. In attempting to reach a collective decision, participants worked to justify their own decisions, in an attempt to persuade others of the 'reasonableness' of their decisions.

> <Dexter the Blade> That [cancer] is equally as important as biological effects for me ... Both have the possibility of causing direct physical harm at an incredibly serious level.

<alanne> isn't the biological more likely to solve the cancer problem? That's why I have allocated more to biological than cancer

<Evefant> good point alanne ... I think most of us would agree that this area was covered a bit by the previous one

<alanne> I agree Evefant, but I think we would be ready to accept an average now though

In this passage of deliberation, the participants were trying to decide how much money to allocate to research into mobile telephones and biological effects and to research into mobile telephones and cancer. *Dexter* had felt from the evidence and from previous deliberation sessions that both issues were of equal importance and had, in his individual allocation task, awarded an equal amount to both. Moreover, as shown above, in the group allocation task he sought to justify (i.e. reason) his answer by suggesting that both biological effects and cancer were capable of causing direct and serious physical harm. However, *alanne* had, in her individual allocation task, awarded more to research on biological effects than to research on cancer. As the above passage shows, she too sought to justify her decision within the group allocation task. From her interpretation of the evidence, and from her interpretation of the previous deliberation sessions, she felt that by addressing the uncertainties related to the possible biological effects of mobile telephones would also address those uncertainties related to the possible link between mobile telephones and cancer. As the response from *Evefant* suggests, *alanne*'s reasoning appears attractive to the other participants. Although, as noted previously, all the participants' individual allocations differed somewhat, *Evefant* argued that most of the group were prepared to accept *alanne*'s reasoning - that research on the one area (i.e. cancer) would be covered a bit by the previous one (i.e. biological effects) – appeared more persuasive (and indeed more reasonable) than *Dexter*'s.

It is telling however, that the participants, despite being open to the reasoning of others, and despite considering consensual agreement to be the ideal outcome, conceded that 'accepting an average' was perhaps the most realistic solution. This was confirmed by the final results of the group task, in which there was, in spite of the attempts to produce a reasoned decision, recourse to taking an average. Although, as suggested above, *alanne* had appeared to persuade most of her fellow participants, the fact that she could not persuade them all (*thfc1* and *Dexter* wished to stick to their individual allocations)

led the participants to take an average from the individual allocations. The result was that, rather than research into biological effects being awarded more than research into cancer (as most of the participants appeared to be in favour of post deliberation), both areas of research were instead allocated the same amount (£25 million). This further illustrates the difficulties faced when assuming that through a reasoned exchange of views, deliberation can necessarily come to consensual agreement without incorporating some form of quantification or aggregation. Of course, there is little wrong with this, provided that it is the citizens' themselves that decide to take an average (or use some form of quantitative solution) in order to reach a final decision. Whilst quantitative methods as a *substitute* for deliberation have been shown to be flawed in terms of democratic legitimacy, there is nothing to suggest that this is the case where they are a product of deliberation.

9.5. The advantages and disadvantages of electronic participation

The participants also discussed the advantages and disadvantages of electronic communication. In Chapter 3.3., there was a discussion of the theoretical literature on e-democracy and computer-mediated communication (CMC). The literature proposes that there both advantages and disadvantages to be had from electronic participation. This section looks at the participants' deliberations in order to discuss their assessments of electronic participation. Analysis of the participants' deliberation also suggests that there are both advantages and disadvantages to be had from electronic participation. This chapter will look to the data in order to analyse the group interactions generally, as well as to see whether there is empirical evidence of the following characteristics of CMC as identified in the literature: *deindividuation; the attenuation of social (status) cues; social equalization.*

The first feature of electronic participation which the citizens discussed is what social psychologists would refer to as *deindividuation.* The participants of course did not refer to it as such, but they were however explicit in noting how they felt like 'a good team', something that suggests they adopted a group identity. This line of inquiry was prompted by the participants reflecting on their interactions as a collective. As discussed above (see Chapter 9.3.), deliberation was generally more cooperative than

adversarial, and the participants themselves felt as though they worked well together as a collective:

<Evefant> we're really good at acknowledging each other :D [big smile face]

<lovecraft> feel the love

<alanne> yeah a good team

We can suggest that in claiming to be part of a 'team', the citizens became deindividuated over the course of their participation. However, such congratulatory assessments prompted one participant to ask whether such deindividuation or 'teamwork' might in part be dependent on the medium across which communication was taking place:

<Evefant> i wonder if we'd seem as credible to each other if we met IRL [in real life], lol :P [cheeky face]

<Spike> that's an interesting question evefant!

The participants thereafter spent a considerable amount of time (at least 20 minutes of a deliberation session) discussing this question:

<Spike> this at least takes away any judgements people make consciously/ subconsciously on appearance/clothes etc

<Evefant> yes, if you saw someone in person you'd automatically focus on looks and stuff

<alanne> good point Spike, good point as I am in my P.J's [pyjamas]!

<thfc1> ha ha
<Evefant> haha

<Spike> i wud [would] never believe someone in PJs

<lovecraft> never trust the PJ's.....

<thfc1> lol

<Evefant> are you chatting in a business suit, spike? ;) [winking face]

<Spike> of course

<alanne> we could all wear P.J's

<lovecraft> spandex is the way to go

<Dexter the Blade> Haha

<Evefant> everyone would be so surprised if one of us said they were naked right now!!! But lets not go there!

<lovecraft> have we wandered from the point?!?!?

<alanne> getting friendly?!

<Spike> yea sorry mod if this is an unimportant diversion

Whilst this good-natured passage of deliberation displays the participants' more informal and humorous sides, it also addresses a serious issue, namely the role that a person's appearance plays in the creation and maintenance of communicative credibility. *Evefant* asks whether the high level of trust and credibility that is evident within the group as a whole, would be lower if people could see each other and make judgments based on what they look like. In expressing that their levels of trust in each other are generally high, and in implying that the same might not be so were they to deliberate FtF, the participants provide evidence that appears to contradict the literature. It was suggested in Chapter 3 (section 5) that trust is generally lower in electronic as compared to FtF communication, since trust is more easily created and maintained when we can see and/or hear our fellow communicants. The findings here however suggest instead that trust in this context might be created and maintained by the participants' cooperative approach to the deliberation and by their sense of 'team' identity (i.e. due to the deindividuating nature of CMC). Trust, seen in this way, can be virtually as well as physically embodied.

This consideration links to a second feature of CMC, namely the *attenuation of social (status) cues.* For example, the participants, although they may have discussed it rather anecdotally, focus on the example of the kinds of clothes people wear. This is a typical example of the role that status cues play in creating (or in not creating) an impression high or low social status. In turn, the creation of high or low status contributes consciously or subconsciously to the degree of trust between participants, and in the credibility which is accorded to their statements. The participants themselves put

forward arguments found in the CMC literature, where they acknowledged that the absence of visual cues allowed for a focus on 'what's being said':

> <thfc1> the good thing with this is that the focus is on what's being said
>
> <Spike> I think this is good. It means there is more focus on what people are saying ... rather than how we speak etc (though that is still present in a smaller sense in how we type etc)
>
> <Dexter> Yeah that's a good point Spike. If we were talking in person then we might be distracted by other things

Spike develops this point to suggest that the advantage of CMC is that it enforces a greater emphasis on the semantic over the phonological dimension of linguistic interaction. That is because people cannot hear how they express themselves to each other (their accent, dialect, syntax etc), they must subsequently focus more on 'what people are saying' (i.e. the meaning they are trying to convey). That said, *Spike* does also acknowledge that CMC itself allows for morphological and syntactical differences between different individual's typing abilities and styles. Overall however, it was suggested that text-based CMC because it did not allow participants to see or hear one another, did allow for more 'black-and-white' communication than would FtF participation processes:

> <cookiemonster> if this were in person then their [i.e. the participants'] presentation skills would have been a factor ... its quite black and white and non biased almost in your format moderator
>
> <moderator> what do you mean when you say 'non-biased' cookie?
>
> <Dexter> I don't think its non-biased Cookie ... but I do agree that presentation skills don't play a role half as much.
>
> <cookiemonster> umm, I just mean that when we say something we say it through text alone – its not like we know what each other looks like or sounds like,
>
> <Dexter> yeah its not like we are swayed by arguments just because the other person making them is attractive lol!
>
> <cookiemonster> I guess you could say that that is one example Dexter!!!

cookiemonster implies that CMC is an 'almost non-biased' form of communication than FtF communication. As a social scientist we might of course question such a strong statement. However, her point does correspond with argument made in Chapter 3.3. that CMC can create a more anonymous and possibly equalizing environment for deliberation. In this sense, electronic participation is viewed positively by those who have had direct experience of it.

In returning to the issue of group identity and group dynamics (see also Chapter 9.3), one participant claimed that one of the benefits of CMC is that it doesn't encourage group factions to develop. This, in their opinion, meant that 'everything is upfront'. In other words, CMC does not allow participants to discuss things with only select members of the group (it is not possible to whisper or speak behind other participants' backs for example

> <alanne> I think it is avoiding little cliques, everything is upfront, no little asides
>
> <alanne> everyone gets a chance to speak also
>
> <Dexter the Blade> I like it ☺ It allows you to see what everyone has to say ... and they can say it whenever
>
> <thfc1> agree dexter
>
> <Spike> yeah it means that it's more difficult for someone to dominate etc
>
> <Spike> people can be typing at same time, but ppl [people] couldnt speak at same time

This thread of dialogue suggests that deliberation in the Citizens' POLIS, from the perspective of those who participate in it, is seen to stand up to the normative assessment criterion of cooperativeness. It also suggests that the process meets the most fundamental characteristic of democratic deliberation – that of equality. In suggesting that cliques are avoided, the implication is that the group as a whole have a shared identity. Individuals who are usually shy or passive in FtF situations are not necessarily so in CM situations. Also, as *Spike* and *Dexter* point out, in CMC it is not possible to 'talk over' or 'shout down' fellow participants. However, these virtues

claimed on behalf of CMC were tempered by *alanne,* who qualified her original argument by suggesting that CMC might itself be susceptible to certain inequalities:

> <alanne> no-one takes over [the discussion] *unless* they can type a lot faster [emphasis added]

A deeper analysis of the data could support this. Looking through the dialogue, no cliques seem to be apparent. Although a quasi-quantative analysis might suggest otherwise, there are no discernible patterns emerge where certain citizens were primarily interacting with one another, in isolation from the group as a whole. Of course, it is clear that some citizens were more active than others in the deliberation overall. For example, *littlered* was conscpicous by her absence from the deliberation for long periods. Because of the nature of the media across which deliberation took place, it is difficult to assess whether this absence was because she felt excluded from the conversation, felt she had little to contribute at that time, or was just actively listening (and exercising her 'freedom to not speak' (see Chapter 5.5.1.)).[79] On the other hand, *Alanne* and *Dexter* figured prominently in much of the deliberation. Again, this suggests that deliberation can still allow for assymetries between different participants in terms of how much they contribute, but this it can be argued, is actually a sign of democratic deliberation (the participants themselves choose the extent to which they contribute). The fact however that participants were not excluded at any time from the deliberation – or certainly did not express any concerns that they were being excluded (either during the deliberation itself or privately to the organiser) – suggests that the Citizens' POLIS displayed a degree of what Benhabib (1996) has called 'egalitarian reciprocity' (see Chapter 3.2.). The lack of cliques suggests a cooperative approach to inquiry. Due to there being little evidence that cliques were being formed, and due to the desire to respect the citizen's right not to speak, the moderator did not seek to intervene too greatly. All questions asked were directed to the citizens as a group, and not to specific individuals, irrespective of the extent to which they were contributing. Of course, had the moderator felt that any of the citizens were being 'closed out' of the deliberation, or had this been indicated to him by any of the citizens (presumably via private correspondence), then he would have sought to intervene.

[79] Of course, the major problem with non-AV CMC is that it is not possible to know whether participants are even at their computer – and whether they are participating for the whole duration of the deliberation!

Similarly, had any instances of 'flaming' (see Chapter 3.3.) occurred, or had any participants acted in such a manner that could be deemed offensive, then the moderator could have intervened.

This was not the only concern that participants had about the use of CMC in participation processes however. Some of these concerns can be seen as an alternative way of looking at a given characteristic of CMC. That is, certain features of CMC were seen to be both advantageous and/or disadvantageous, depending on the perspective from which they were being viewed. For example, as was suggested above, the absence of non-visual cues, particularly those which relate to the creation of social status, can allow for more egalitarian deliberation. At the same time, it was suggested that the absence of non-verbal, visual cues – for example body language – can also have a detrimental effect on deliberation:

> <alanne> I do like human face to face contact though, words can be misconstrued sometimes, body language cannot
>
> <Evefant> if someone writes "yeah" it's a bit hard to tell what they mean...
>
> <Dexter the Blade> Yeah
>
> <lovecraft> whaddya [what do you] mean by 'yeah'....?!?!?
>
> <Dexter the Blade> :P

alanne suggests that CMC is perhaps a less effective medium of communication when compared to FtF communication. This is however premised on the idea that communication proceeds on the basis of either understanding or 'misunderstanding' (cf. Chapter 9.1.). *Evefant* also makes this point, which is then illustrated in a tongue-in-cheek manner by *Dexter* and *lovecraft.* We might argue however that this concern is valid only if we are to take (mis)understanding in straightforward terms; with meaning as something which is transferred, either successfully or unsuccessfully, from speaker to recipient. Nevertheless, it is important however because it is a concern voiced by the participants.

There were also some practical and logistical problems of CMC identified:

<alanne> I get knocked off wen [*sic*] I write a long sentence

<alanne> yes and you miss the answers when you get knocked off

<Evefant> and when you're typing it's a bit hard to follow the convo [conversation]

As do most CM processes, it was expected that the Citizens' POLIS would experience some 'technical problems'. The Citizens' POLIS on MTRH was no exception. Deliberation was at times disrupted by connectivity issues, with for example those participants relying on wireless LANs (Local Area Networks) frequently being 'knocked off' the internet (and as a result 'kicked out' of the discussion room). In FtF participation processes this is of course not an issue. The main problem here was that, in losing connection, often for minutes at a time, those participants would also miss the conversation which took place between their fellow participants during that time. Although both the moderator and the fellow participants, tried to bring those disconnected 'up to speed', this had the knock on effect of delaying and disrupting continued lines of discussion for the group as a whole.

Another problem identified above, might be referred to as 'deliberative fluency' (or what Herring (1999) has termed 'interactional incoherence'). This term can be used to represent the degree to which group discussion flows smoothly and homogenously. The Citizens' POLIS, as a group exercise, to an extent must allow for the turn-taking characteristic of all social interaction (see Chapter 3.2.). This is of course modified by the fact interaction takes place in a virtual environment (see also: Bohman, 2004). Turn-taking is relatively straightforward to abide by in FtF communication – where facial expressions, body-language and even physical gestures such as hand-raising are employed to signal that 'my turn is next' and in order to avoid 'talking over' fellow participants. As suggested by *alanne* above, such body language is absent from CMC. In the Citizens' POLIS on MTRH there were a number of instances recorded where participants spoke (i.e. typed and sent messages) simultaneously, which created some difficulties:

<Evefant> I think the problem with this is that it's hard when we're following several different questions at the same time

<thfc1> and that when u get lost

<Spike> and conversations can get a bit disjointed ... and sometimes if I've typed slowly I've missed my chance!

<lovecraft> yes, it is not totally condusive [*sic*] to stringing long sentences....

The disjointed nature of CMC certainly brings into consideration possible limitations in the ability of electronic processes such as the Citizens' POLIS to foster fluid deliberation. It is not of course clear that we should see disjointed deliberation as a limitation. Even if we are to see this as a limitation however, then this must still be weighed against those advantages outlined earlier – for example, the egalitarianism fostered by the anonymity – before a judgment can be made on the effectiveness of CMC within public participation processes.

In drawing this passage of deliberation to a close, the participants seemed somewhat undecided as to whether, on the whole, electronic participation should be considered better than FtF participation.

<alanne> overall though it is quite a novel experience and largely we have come up with some good arguments

<Spike> agreed alanne

<alanne> You know now I come to think of it , I don't think it is making much difference [communicating electronically].

<Evefant> i think a good argument (hopefully) always gets respect, no matter who it comes from and how it comes

Although they firstly appeared to conclude by suggesting that the Citizens' POLIS has allowed them to take part in effective deliberation which has produced, in their opinion, some good arguments. Despite this, the participants' last word on the matter was to suggest that perhaps the differences between CM and FtF communication should not be overstated. As *Evefant* notes – in language resonant of deliberative democracy idealists - a good argument will get respect regardless of who makes it and how (including across which media) it is made.

9.6. Conclusions

It was found that some participants had very little basic knowledge about the technology and how it operated. It is suggested that before deliberation can meaningfully address normative issues, such as whether a technology should be further developed or regulated (based on the citizens' assumptions of whether it poses any risks to health) it is useful for the participants to acquire (if they do not already possess it) basic technical knowledge of that technology. Analysis of the data suggests that participants in the Citizens' POLIS felt more informed, and more able to 'back-up' their arguments, after their participation than before it, both in terms of their understanding of basic technical knowledge and in terms of the technology's relation to their everyday lives (e.g. whether or not they lived near to a base station). Analysis of the data also suggests however that it is possible to 'over-inform' participants in public participation processes, as it is also possible for political institutions to 'over-inform' the public on science and technology in general. It was claimed that members of the public may neither have the time nor the capacity to 'understand' significant amounts of technical material.

It was found also that some participants found themselves more interested in the issue, and that they would take more notice of it in the future. Analysis of the data suggests that the process did possess the capacity to change some of the participants' views. A few participants felt less concerned about the issue of MTRH following their participation, whilst one participant felt more concerned following their participation. The citizens' negotiation of the hypothetical funding allocation task showed a general willingness to compromise and modify their individual decisions in order to reach a collective decision (which they felt was necessary despite being told otherwise). One participant however was unwilling to compromise. This suggests that it cannot be assumed (not that it should of course) that deliberation will inevitably end in consensus. It was found that reaching a decision based on 'reasons all do accept' is somewhat optimistic. On the whole however, participants were willing to work together, and saw the importance of at least trying to reach a mutually satisfactory decision. Again, generally speaking, participants were willing and able to offer reasons in support of their arguments and decisions. It was interesting to find however, that participants chose recourse to quantitative methods in order to attempt to resolve their different individual decisions. It was suggested that this does not compromise the

democratic legitimacy of the process, since this quantification was a product of, rather than a substitute for, deliberation.

The participants identified both advantages and limitations of electronic participation *vis-a-vis* FtF participation. Analysis of the data suggested that there was dindividuation within the group. Participants claimed to feel as part of a 'good team'. The citizens questioned whether they would feel as such if the deliberation was taking place FtF. In doing so, they implied that trust and credibility are things that are not necessarily physically embodied but that can be created virtually. Electronic participation was seen to be advantageous insofar as it allowed for what was seen to be more 'black and white' or 'almost unbiased' participation. This was due to the AV anonymity of electronic participation attenuating the role of presentation skills and (social) status cues. It should be noted however, that not all participants saw this as an entirely 'good' thing, and the loss of body language for example was seen as possibly detrimental to the semantic efficacy of the deliberation. The citizens also argued that electronic participation discourages participants from forming 'cliques', something which was seen as advantageous and which contributed to the team mentality (i.e. to the deinvididuation of the group. Some practical problems with electronic participation were emphasised, amongst them the lack of 'deliberative fluency' *vis-a-vis* FtF participation. Whilst it can be questioned whether such fluency is indeed necessary, it is important to place the limitations of electronic participation alongside the advantages (and vice-versa). In conclusion the participants argued that maybe one can overstate the difference between CM and FtF communication, and that 'a good argument always gets respect no matter who it comes from and how it comes'.

Chapter 10: Conclusion

This thesis has been guided by four main research questions, spread across substantive, theoretical and the methodological dimensions. The first part of this chapter will summarise the findings of this thesis in relation to these four questions.

Research Question 1: What are the different types of public participation process and is there a role for the social scientist in the organisation of public participation processes?

- *How have existing examples of public participation processes been organised and by whom?*
- *What does the literature tell us about the limitations of these processes*

This thesis has provided a typology of models of public participation. The typology is of orchestrated public participation processes, which have been distinguished from more organic forms of public engagement, by virtue of the fact they take place within an institutional space for deliberation. The three main types of public participation identified are: the exogenic (sponsor-led), endogenic (citizen-led) and mesogenic (social scientist-led) models. The mesogenic model, although without limitations of its own, was argued to be the preferable form of public participation, since it offsets the major limitations of the exogenic and endogenic models - namely the low democratic legitimacy of the former and the low instrumental effectiveness of the latter. It was suggested that the role of the university social scientist and the absence of stakeholder sponsorship was important. The notion of 'independence' was critically discussed and an argument was made for the relative neutrality of the university social scientist. This allows for a process that is more genuinely legitimate than the *exogenic* model, yet more practically feasible than the *endogenic* model. This thesis is therefore seen to make a contribution to the observed 'normative turn' in STS.

The Citizens' POLIS was identified as being an empirical example of a particular type of in a particular type of public participation process. The Citizens' POLIS is underpinned by philosophical Pragmatism. Particularly influential to its development was the work of John Dewey (1916; 1929; 1991/1927) via James Bohman. Dewey's

epistemology was summarised under two related epistemological tenets: consequentialism and experimentalism. In discussing these two tenets, it was argued that this thesis serves as both a form of social inquiry and a form of sociological inquiry.

Insofar as it is composed of an actual public participation process, this thesis has provided an opportunity for a group of citizens to cooperatively perform social inquiry into an issue of public significance – in this case the Citizens' POLIS on MTRH. The central argument here was not that Pragmatism can be seen as the 'best' philosophical approach to participatory decision-making, but rather that participatory decision-making, particularly in areas where scientific knowledge is uncertain, is by its very nature a Pragmatic form of social inquiry. Decision-making under conditions of uncertainty shares with a Pragmatist philosophy the idea that knowledge is verified only once the consequences of acting on our choices are manifest. At any given time then, all knowledge is prospective and in James' terms 'plastic'. However, in certain instances, knowledge surrounding an issue might be considered particularly uncertain – indeed particularly plastic. Making a decision in such instances therefore necessitates public deliberation as a means of choosing a course of action from a number of possible alternatives. As such, deliberation can be thought of as the reasoned consideration of possible consequences of possible alternate courses of action. In this respect, deliberation is thoroughly Pragmatic.

Research Question 2: What are the views of a group of citizen participants on the issue of 'mobile telephones, risk and health' in a public participation process?

- *Do they feel mobile telephones pose a risk to health?*
- *What are their views on the current political and scientific institutional responses to the issue?*

The thesis has produced the findings of a group of citizens on the issue of 'mobile telephones, risk and health'. One of the main purposes of the Citizens' POLIS is to serve as a useful tool for policymakers and other relevant stakeholders. The very legitimacy of the Citizens' POLIS as a public participation process relies on it being

instrumentally useful (as was discussed in Chapter 4). In order to make the citizens findings more accessible to policymakers a summary report was produced. This report was co-produced by the researcher and the citizens, via a process of respondent validation, so as to ensure the findings reflected, as accurately as possible, the citizens' post-deliberation views and decisions. This summary report was then expanded and a more detailed account of the citizens' views on the issue of MTRH was provided (Chapter 7).

It was found that citizens' were 'not overly concerned' by the issue of MTRH. To an extent, this lack of concern questions whether the issue of MTRH is indeed an 'issue' at all (in the Deweyan sense of the term). Although continued media coverage would have us believe that MTRH is an issue of public interest and concern, the outcomes of the deliberation in the Citizens' POLIS call this into question. That said, although the citizens were unconcerned with any possible current risks to health, and did not feel that the use or development of the technology should be curtailed in any way, they were wary of the possible long-term effects of mobile telephone use. The citizens' argued that current scientific uncertainty on the potential long-term biological effects of mobile telephones ensured that there should be continued scientific research in this area, and continued funding for such research.

In their hypothetical research funding allocation task, the citizens prioritised the sub-areas of MTRH research as follows (from high to low priority): base stations; cancer; biological effects; electrohypersensitivity; other. It was argued that the responsibility of providing sufficient funding resource lay equally with governments and the mobile telecommunications industry.

In relation to the responses of political and scientific institutions to the issue, it was argued that although they were satisfactory in terms of technology regulation, they were unsatisfactory in terms of public engagement. On the one hand, it was felt that due to the absence of significant risks to health, current radiation guidelines were satisfactory. Moreover, it was felt that the precautionary principle, as a piece of advice, was satisfactory. It was argued that to turn this into legislation in any way was not justifiable and would infringe on individual liberties. On the other hand, it was argued

that the public were not being given sufficient scientific information about the issue and were unable therefore to make an informed decision for themselves.

The implications of these findings in regard to MTRH are generally that political and scientific institutions should continue to address the subject as they have been, with no major changes being proposed. However, the wider implications are that these institutions should consider ways in which they can improve their methods of informing and engaging with the public, methods which according to the findings of the Citizens' POLIS are presently unsatisfactory.

Research Question 3: How are the key concepts of 'risk', 'precaution' and expertise' represented by the participants in the public participation process?

- *How do the constitutions of these concepts in the public participation process relate to existing 'public' constitutions of these concepts, as reflected in the literature (i.e. Does the constitution of these concepts differ in a deliberative environment as compared to a non-deliberative environment (as reflected in the literature)).*

The citizens generally found it difficult to provide general definitions for the terms 'risk' and 'precaution'. Risk from mobile telecommunications was seen to be low relative to other everyday risks (see also Chapter 7). Also, risk was generally understood in terms of a cost versus benefit equation. Following on from findings related to the previous question, it was argued that assessing how concerned we should be over possible adverse effects on health of mobile telephone use was inextricable from assessing how useful and beneficial mobile telephones are to individuals and society in general. As noted above, the latter was seen to outweigh the former. 'Precaution' was also seen as a concept for which it was not easy to 'put parameters on'. That said the participants attempted to define what precautionary advice should entail (as noted above), but in focusing more on 'caution' over 'precaution' the citizens noted that there were enough 'known risks' (known knowns) for them to worry about, leaving little time to worry about uncertainties (known unknowns).

Findings from the Citizens' POLIS run contrary to some of the existing representations of public conceptions of 'risk' and 'precaution', as found in the literature (Chapters 7.1 and 7.2.) It was found that contrary to existing research on group polarisation (e.g. Lea *et al*, 1990) group deliberation in the Citizens' POLIS encouraged the participants to move from more extreme individual viewpoints - either risk-averse or risk-ignorant - towards a more moderate group viewpoint and a more contextual assessment of risk. This transition exemplified the capacity of deliberation to allow for cooperative work oriented to the search for mutually satisfactory conclusions. It was found however that deliberative group decisions do not necessarily differ from affective individual decisions. Research on the affect heuristic (e.g. Slovic *et al*, 2002) has shown that an individual's perception of risk is negatively related to their perception of benefit. In the Citizens POLIS, it could be suggested that the same was found. Although participants agreed that there was considerable scientific uncertainty, they also concluded that there was little risk from mobile telephones. This related, in part at least, to the fact that they felt that there were many significant benefits to be had from the technology.

The citizens were more forthcoming in defining expertise. Overall they equated expertise with science. One participant however questioned this by claiming that 'anyone can be an expert'. Most participants however also felt that being recognised as having expertise first involved laying claim to expertise, and in some cases these claims were illegitimate. The citizens' definition of expertise focused on two characteristics: credentials and experience. In making this definition, the citizens essentially equated expertise with training in and/or experience of science. Furthermore, it was felt that for the purposes of informing decision-making in science and technology, only scientific evidence – in the traditional sense – was deemed valid. Indeed, it was even suggested that to be considered evidence as such, information needed to be of a scientific nature. Conversely, the citizens felt that the activists should not be considered experts, with their views instead being seen as 'hearsay'. Their experiences, as activists and sufferers, were not seen as being necessarily relevant to the decision-making process, which was seen as a 'scientific issue' that required a 'scientific education' in order to provide evidence (one participant even went as far as to claim that the activists appeared 'not very well educated'). There was a disparity in the citizens' assessments between the credibility attributed to the scientists' evidence and the comparative lack of credibility attributed to the activists/sufferers evidence. In the case of MTRH, scientific

expertise was seen to be the most persuasive and influential. This may have been partly due to the fact that the citizens were less able to identify with the scientists rather than with the activists/sufferers, which meant they were less willing to see activists' embodied knowledge as being a credible source of expertise, on a par with the scientists' research-based evidence. The perceived 'otherness' of scientists might therefore have contributed to the credibility and expert status that they were accorded by the citizens.

Research Question 4: Does the Citizens' POLIS 'work' as a public participation process?

- Does the Citizens' POLIS produce 'good' deliberation, as according to a number of evaluative criteria identified in the theoretical literature?
- What can the Citizens' POLIS tell us about the features and possibilities (positive and negative) of electronic public participation?

Insofar as it included also an assessment of the Citizens' POLIS on MTRH, this thesis has contributed to our understanding of what constitutes a 'good' participation process. Chapter 3 critically discussed the literature on deliberative democracy in order to propose a set of criteria by which to assess whether a given public participation process can be considered a 'good' public participation process. To this end, the work of James Bohman (1996; 1998; 1999) has been influential, and has also drawn the discussion of deliberative democracy within a Pragmatist framework. The general aim was to discuss whether the Citizens POLIS might be considered an effective public participation process, based on an assessment of whether or not it fulfilled these criteria. Within this general aim, the thesis discussed the advantages and disadvantages of the Citizens' POLIS as specifically an electronic public participation process

In Chapter 9, the question of whether the Citizens' POLIS can be considered an effective public participation process was addressed using the empirical data. Using the normative criteria identified in Chapter 3, it was found that the citizens felt more informed about the issue of MTRH after their participation, both in terms of their understanding of basic technical knowledge and in terms of the technology's relation to their everyday lives. Some citizens however warned that, as well as under-informing the public, it was also possible to 'over-inform' them. Information overload was possible, since the public it was suggested, may have neither the time nor the capacity

to 'understand' significant amounts of technical material. In interpreting 'understanding' in such a way, the participants reinforced the deficit model of PUS (see Chapter 8). Other findings showed that the citizens were generally willing to change their views following reasoned discussion with their fellow participants, and that they were (again generally) willing to work cooperatively to reach shared decisions. In some cases however, cooperative inquiry was blocked by an unwillingness of a participant to change their views, or to provide reasons as to why they were unwilling to do so. This suggests that although one can hope deliberation facilitates a cooperative approach to enquiry, one can not necessarily expect it.

Analysis of the data revealed both advantages and disadvantages of electronic public participation *vis-a-vis* face-to-face public participation. It was suggested that advantages related to the AV anonymity characteristic of electronic participation included: the 'black and white' nature of CMC and the attenuation of (social) status cues. The disadvantages of electronic participation were seen to include the lack of 'deliberative fluency', as well as the inevitable logistical problems which accompany the use of technology as a mediator of communication (related to loss of internet connection etc).

10.2. The significance of the Citizens' POLIS

Just as with the findings of the Citizens' POLIS on MTRH, it is also possible to summarise the significance of the Citizens' POLIS across the substantive, methodological and theoretical dimensions. The only task which remains then is to suggest how future research might carry this project into its next phase of evolution.

One of the main implications of the Citizens' POLIS on MTRH is to downplay the significance of the issue itself. This is however, certainly not seen to be a limitation. As noted at the very beginning of this thesis, the topic was chosen due to the researcher's interest in it. It was not assumed that just because the researcher felt the issue was of sufficient import so as to dedicate a PhD thesis to it, so too would the citizens feel that it was worthy of further academic and political attention. The use of member validation helped to ensure that the researcher had not unwittingly made the issue of MTRH appear of more concern to the citizens than their deliberation had

suggested. As noted above, it was found that the citizens were 'not overly concerned' by the potential risks of mobile telephones. What it does help to justify is the need for more Citizens' POLISs – and other public participation processes – to be conducted in the future. Myriad other issues will however also lend themselves to the Citizens POLIS model; issues such as global climate change, nanotechnology, biotechnology to name but a few.

Although obvious, it is worth stating that one of the main implications of the Citizens' POLIS on MTRH is that further research is desirable. Overall, the citizens concluded that in order for it to be resolved, or at least move nearer a resolution, the MTRH debate required more scientific attention which, as they also acknowledged, also required more economic investment. Substantively then, this thesis supports the citizens claims for further investment into scientific research on MTRH. It also supports the citizens' argument that the mobile telecommunications industry and government should (continue to) be responsible for the provision of additional funding in the future. In terms of the destination of any future funding, I argue, via the citizen participants, that the area of research within MTRH which should be given greatest priority, and therefore most future funding and attention, is research into *base stations.* Thereafter, the following areas are to be considered for funding in order of priority (high to low): *biological effects; cancer;* and *electrohypersensitivity.* The hypothetical funding allocation exercise might also be used as a useful guide for the relative distribution of future funding and resource into research on MTRH. Although too much preoccupation with specific percentages is unnecessary, as can be seen, the citizens felt that base stations, biological effects and cancer were of similar import. Conversely, electrohypersensitivity and any 'other' areas of research were seen to be of considerably lesser import. These are considerations which funders and researchers alike should take into consideration when proposing research or when allocating funding.

On the policy level, the citizens' views on the precautionary principle also have significant implications. Regulatory authorities should continue with a 'hands-off' precautionary approach but should do more to ensure that the wider public are better informed through more transparent means of information provision. Practically speaking, this thesis supports the citizens' requests for more advisory leaflets to be

produced by radiation regulatory authorities and national departments of health, which can provide the public with a balanced overview of the MTRH debate. As a model for what constitutes balanced information, it is suggested that the evidence provided in the Citizens' POLIS (see Chapter 6.1) could serve as a useful guide. One of the main methodological benefits of the process, as acknowledged by the citizens, was the very fact that it provided the citizens with a symmetrical overview of the different positions and arguments. This thesis argues in favour of the provision of more readily available, convenient and specially-produced information. It was found in the Citizens' POLIS that the participants, although they found the process rewarding and interesting, nevertheless failed to gather and share large amounts of information and evidence that they themselves might have gathered. They cited lack of time due to the competing demands of everyday life as the reason for this. As such, making more informative leaflets more readily available is one solution to this. The thesis also proposes that more information should be provided on mobile telephones at point of sale, in line with the citizens arguments in favour of this. They propose that, in future a 'disclaimer' should be provided at point of sale, which informs the buyer that scientific knowledge, specifically on the adverse effects of long-term mobile telephone use, are uncertain.

It is important to emphasise that the provision of such information is not a substitute for public deliberation, but rather a supplement to it. Chapter 4 discussed the virtues of public participation – as a source of bidirectional engagement between citizens and policymakers – over downward, unidirectional public communication. In line with the normative argument that deliberative democracy should play a more central role than it does in political decision-making (see Chapter 3) and supported by the empirical argument that the Citizens' POLIS 'works' as an effective public participation process, it is possible to make the overall argument that the Citizens' POLIS has the potential to play an important role in political decision-making in the future, particularly but not solely in issues related to science and technology.

That the Citizens' POLIS is specifically an *electronic* public participation process is also significant. In an era in which social networking websites such as *Facebook* and video-sharing websites such as *YouTube* are amongst the most frequently visited on the internet, the potential of the Citizens' POLIS to provide a forum where citizens can be connected is salient. The acknowledgement that politics needs to make fuller use of the

internet in order to engage with voters - particularly young voters - has been reflected in recent political campaigns in the US and the UK. The successful presidential election campaign of Barack Obama in 2008 was seen to be heavily indebted to the Democrats' novel use of the internet in order to drum up support, disseminate manifestos and court potential voters. Similarly in the UK, all the major political parties made use of websites such as *Facebook* and *YouTube* in their 2010 election campaigns.[80] However, these are primarily forms of electronic public communication and, as noted in Chapter 3.3 (cf. Rowe and Gammack, 2005), the development and use of a growing number of electronic public communication processes has not yet been matched by the development of electronic participation processes.

Although a discussion of existing research on the trend towards computer-mediated communication has been made within this thesis, a fuller discussion of the electronic revolution in communication, particularly in a post-Web 2.0 era, has largely been beyond its scope. However, the central argument is clear, and it is one which supports the call for social scientists and policymakers alike to explore the possibilities of electronic public participation. Although, it is no doubt anaethema to the author of its most famous advocate (Habermas, 1996), it is clear that the 'public sphere' must at least consider adapting to a society within which communication is becoming technologically-mediated, irrespective of whether or not social scientists think this is a good thing. The idea that forms of traditional face-to-face civic deliberation should increasingly be supplemented (and eventually supplanted?) by newer forms of electronic civic deliberation is perhaps less a normative appeal than a practical response to far broader social and cultural trends within Western, technologically-developed countries. Ultimately, it is perhaps undesirable to discuss the relative promises and perils of electronic public participation in isolation from a broader discussion of the way in which forms of communication are rapidly undergoing transformation on a far broader scale. In Chapter 3.3 and 8.5 a number of advantages of electronic public participation were discussed (in addition to a number of disadvantages of course). However, rather than a 'virtual public sphere' being seen as desirable development for those who favour of a participatory system of decision-making, it is perhaps more an

[80] Also, a live stream video of the pre-election Prime Minsterial debate was watched by 45000 online viewers.

inevitable development, should those who favour a participatory system of decision-making wish to 'keep pace' with a changing society.

In conclusion, it conceded, although certainly not reluctantly, that the Citizens POLIS, as a method, is not 'finished'; it does not claim to be the 'ideal' public participation process. Rather, it is (in the Deweyan sense) an *experiment* in public participation. It is hoped then, that the experience gained from organising and analysing the Citizens' POLIS, as detailed in this thesis, will prove of use to other social scientists looking to organise a public participation process. As is hopefully clear by now, for the Pragmatist, nothing is fixed or final. There is therefore no final ideal public participation process. If such a thing exists in theory, then it exists only in theory. I do not claim that the Citizens' POLIS is the ideal public participation process. Nor even do I claim that Citizens' POLIS used in this thesis is the Citizens' POLIS in a final, ideal form. Rather, my aim has been far more modest; far more Pragmatic. It is hoped simply that, the experience of the Citizens' POLIS will contribute to our ongoing understanding of what constitutes a 'good' public participation process, according to certain normative criteria – criteria which are themselves rooted in past experience and which can be modified in the light of new experience. Although concluding this thesis marks the end of one period of evolution in my research on this subject, I certainly do not see it as the end of my interest in it, and hope to find new avenues and new ways of exploring the usefulness and applications of the Citizens' POLIS further.

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Appendix A

Sample email to Stage 1 interviewees

Mail Message

Reply Resend Read Later Delete

Mail Properties

From: Simon Williams

To:

Subject: PhD student requires assistance and information about the possible effects of telecommunication technology and EMFs on human health

Dear ,

I am a PhD student at the Cardiff Institute for Society, Health and Ethics at Cardiff University. I am currently looking to interview experts in the subject of mobile telecommunication technology, EMFs and the possible effects of these on human health.

As such, I am enquiring as to whether you would be able and willing to spare some time in order to assist in my research by discussing with me your views on the subject.

My research is interested in the issue of public engagement in science and technology decision-making, and in particular with reference to new technologies and their associated possible risks to health (in this case mobile telephones and EMFs). I intend to set up an innovative public participation process (akin to the 'citizen's jury' method), whereby members of the public can discuss issues which they feel are pertinent, including mobile phone use, base station siting and debates concerning the biological effects of RF radiation. (Please note I will send you more information about the study should you agree to participate).

In order to facilitate the public participation process, I wish to obtain information from key personnel, including scientists, mobile telecommunications industry representatives, mobile telecommunication regulators and mobile telephone (mast) activists. This information can provide starting points and direction for the citizens to discuss and deliberate over. I should note that all information acquired from you will be anonymised throughout the research (unless otherwise requested), and as such, those taking part in the research and those reading the dissemination of the research findings will not know the names or any identifying information of the other participants. My research is subject to the full ethical guidelines of my university department and my funding body (more details on this will be provided before your interview, should you agree to participate).

I would be happy to travel to London in order to conduct the research, or alternatively conduct the 'interview' (more like a structured conversation) via landline telephone. I am flexible regarding dates and times.

I would be very keen to know whether you would be able and willing to participate in

this study.

I look forward to hearing from you.

Yours sincerely,

Simon Williams

PhD Student
Cardiff Institute for Society, Health and Ethics,
Cardiff University
54 Park Place
Cardiff
CF10 3AT

website:
http://www.cardiff.ac.uk/socsi/contactsandpeople/postgraduateresearchers
/williams-overview.html
Tel: 029 2087 9609
Fax: 029 2087 9054

Appendix B

Research Project: An Online Public Participation Process on the Issue of Mobile Phone Use, Risk and Health

Participant Information Sheet – Stage 1 Interviewees

You are being asked to participate in an online public participation exercise called a Citizens' Participatory Online Interactive System (Citizens' POLIS). The purpose of this Citizens' POLIS is to see what views members of the public have on the issue of *Mobile Telephones, Risk and Health.*

The aim of this research is to engage them with important evidence and information on the issue of *Mobile Telephones, Risk and Health.* This evidence will be taken partly from interviews with experts like yourself. The interview will take approximately 1-2 hours in length (depending on how much time you are able and willing to afford). The interview will take place either in person or via the telephone, depending on your preference. You will be asked questions about the subject of 'mobile phones, risk and health' and are of course entitled not to answer any questions which you do not wish to. Please note the following:

1. Participation in this study is voluntary.
2. You are free to withdraw your participation at any time.
3. Participation is anonymous. Although the researcher will keep your details for his own records initially for the duration of the study, these will be deleted after the study, and will be anonymised in any published work, or any work in the public sector. As such your details will be kept confidentially. Other participants will not have access to your personal details.
4. The researcher is subject to the full ethical regulations of his/her home department at his/her university. For more details, please see: http://www.cardiff.ac.uk/socsi/research/researchethics/index.html

If you would like to receive more information about this research, please do not hesitate to contact me on williamssn@cf.ac.uk or.

Yours sincerely,

Simon Williams

Tel:02920879609
Fax:029 2087 9054

Participant Consent Form – Stage 1 Interviewees

I understand that my participation in this research is entirely voluntary ☐

I understand that I am able to ask any questions about the research of the researcher throughout, and am also able to withdraw my participation at any time during the research. ☐

I understand that my participation in this research is entirely anonymous and that it will not be possible for other participants or for anyone reading any published dissemination to trace what I have said back to me. ☐

I understand that the interviews will be recorded and transcribed for the researcher's benefit, but the recorded audio will be deleted after transcription and the transcript will be anonymised. ☐

I understand the purpose of my participation in this research, and am aware that I am able to ask the researcher for more details and for feedback after the research has been completed ☐

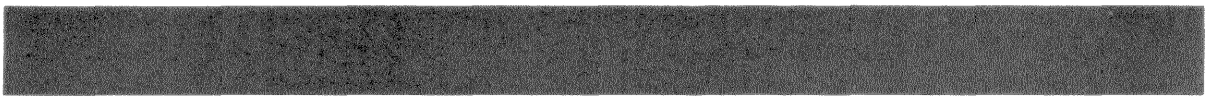
I agree to take part in this research, in line with the terms outlined above.

Signed (Participant)

Print Name

Appendix C

Online Advertisement for Potential Citizen Participants



Cardiff homepage > Jobs > Part-time, Evening & Weekend > Social Science PhD Student Looking for Research Participants

Social Science PhD Student Looking for Research Participants

Date(s) of work: Various
Location: Internet-based

I am a PhD student in Cardiff University. I am currently doing research on the issue of public participation in science and technology decision-making. I am very keen to invite interest from potential participants. No experience necessary. Access to internet, will be required. No specific competencies required, as information and guidance will be provided where necessary.

Participants will be offered compensation for their time.

For more information and to register your interest, please reply to this add, or contact Simon Williams at: williamssn1@cf.ac.uk .

Appendix D

Information Sheet B

Dear Respondent,

I am very pleased to hear that you are interested in taking part in my research project. Due to an overwhelming interest in this project, it is necessary to select from a number of potential participants. In order to make this selection, I require some information from you. For me to receive this information, I would be very grateful if you were to complete the questionnaire attached (below).

I can assure you that all information will be kept confidential. If you are not selected to take part in this research, I will ensure that this information is deleted or disposed of in a careful and confidential manner.

If you are not selected to take part in this research, I would like to re-iterate my gratitude for your interest in this research. However, I must also emphasise that I am not able to offer any compensation for this enquiry or for your having completing the attached questionnaire. Should you choose to complete and return the questionnaire, this must be considered a voluntary decision.

If you are selected to take part in this research, I will be in contact in the very near future with more information and will ask you to confirm your interest at that stage.

In the meantime, should you have any further queries, please do not hesitate to contact me again, using the following contact details:

Simon N. Williams
Williamssn1@cf.ac.uk
Tel:02920879609
Fax:029 2087 9054

Questionnaire

Name: _____ **Email:** _____

1. **How old are you?**

   Under 18 ☐ 18-25 ☐ 26-50 ☐ Over 50 ☐

2. **What is your gender?**

   Male ☐ Female ☐

3. **(a) Do you have any children?**

   Yes ☐ No ☐

   (b) If yes, what age is your children/ what ages are your children?

   ---

4. **What is the highest level of schooling you have completed?**

   Primary School ☐ Secondary School ☐

   Middle Technical / Vocational (eg. A-Level, NVQ) ☐ Higher/University ☐

5. **What is your job?**

   ---

6. **Does your job require the regular use of a mobile phone?**

   Yes ☐ No ☐

7. **Have you ever been affected by cancer?**

   Yes ☐ No ☐

8. **Do you live near (within 400 yards) of a mobile phone mast?**

   Yes ☐ No ☐ Don't Know ☐

9. **Do you currently use a mobile phone? (If no, please answer question 10; if yes, please skip to question 11)**

   Yes ☐ No ☐

10. (a) Would you ever consider using a mobile phone?

Yes ☐ No ☐

(b) If no, why not?

(Move to question 12)

11. (a) How long have you been using a mobile phone for (in total, not just your current phone)?

Less than 1 year ☐ 1-4 years ☐ 5-9 years ☐ 10 years or more ☐

(b) On average, *PER WEEK*, how much time do you spend talking on your mobile phone?

Less than 1 hour per week ☐ 1-4 hours per week ☐

5-9 hours per week ☐ 10 hours or more per week ☐

(c) What do you use your mobile phone for (*tick as many as apply*):

Emergency calls only (e.g. 999/roadside rescue) ☐

Other essential calls (e.g. business / work related) ☐

Non-essential calls (e.g. recreational/conversations with friends etc) ☐

SMS ☐ Video-calls ☐ Playing music ☐ Internet Browsing ☐

Games ☐ Other ☐

12. Do you own/use any of the following technologies (*tick as many as apply*):

PC/Laptop ☐ The internet ☐ i-pod/mp3 player ☐

Digital Camera/Digital Video Camera ☐ Digital TV/Radio ☐

Cable/Satellite Television ☐ GPS/Satellite Navigation System ☐

PDA/Blackberry ☐ Cordless (DECT) phone ☐

Appendix E

Research Project: An Online Public Participation Process on the Issue of Mobile Telephone Use, Risk and Health

Information Sheet – Citizen Participants

Contact:
Simon N. Williams
Cardiff Institute for Society, Health and Ethics
Cardiff University
53/4 Park Place
Cardiff
CF10 3AT
Tel:02920879609
Fax: 029 2087 9054
Email: Williamssn1@cf.ac.uk

Dear Respondent,

Thank you very much for your interest in this project. If you have any further queries about anything to do with the project, please do not hesitate to email me at williamssn1@cf.ac.uk .

I am a 26 year-old PhD student in Cardiff University, looking at ways of improving resources for public participation in political decision-making.

The aim of this project is to conduct an online public participation process. A public participation process, such as a citizens' jury, is not too dissimilar to a legal jury. They take a small number of members of the general public (often about 8-12), and get them together to hear a variety of evidence from a variety of sources on a particular 'case'.

The main difference is that in a citizens' jury unlike a legal jury, instead of an individual/ or individuals being on trial there is an issue on trial.

This research project is called the Citizens' POLIS (Participatory On-Line Interactive System). It can be thought of as an innovative, on-line public participation process, not unlike a citizens' jury in terms of its aims and objectives. The first Citizens' POLIS, for which you have volunteered, will be on the issue of 'mobile telephones, risk and health'.

In the UK and Sweden, nearly all of use mobile telephones (in fact there are more mobile phones than Most of us use mobile phones, and many of us will remember there being media stories in the late 1990s. However, the debate amongst key people in this field is an alive and complex one. It is however, one that is largely played out behind closed doors, between scientists, the mobile phone industry, activists and government. Any information readily available to the public usually comes through the media.

The aim of the Citizens' POLIS, is to give a group of members of the public access to the debate and access to expert evidence from these key people. You will then discuss the subject between yourselves, and will come to some conclusions and decisions of your own about the debate.

You do not need to have any pre-existing special knowledge about this subject – we are looking for ordinary members of the public. You will however become knowledgeable about the subject during the course of your participation. The evidence will be put on a website – (don't worry, it will not require too much work or too much time – only as much as you are able and prepared to make over and above a minimum). All you will have to do is read, listen or watch a few things on that website, and then discuss what you have seen afterwards with your fellow citizens.

WHY? Good question! Well, the point of public participation processes is that the public aren't often given enough of a chance to have their say on a number of issues, particularly such as those that are related to science and technology decision. Often the only chance members of the public are given is either through voting, or through public opinion surveys – which allow little room to explore citizens' views in depth. In a

public participation process however, a small group of citizens are given access to expert information, and are given the opportunity to evaluate this themselves, and then discuss (deliberate on) it in depth. You will therefore be making a significant contribution to this democratic experiment.

The great thing about having a public participation process online – like the Citizens' POLIS - is that it allows you to take part from the comfort of your own home (or office, or wherever you can access the internet) at times convenient to yourselves.

This research will require participants to take part in 5 online discussion sessions (lasting a minimum of 1.5 hours in length). When they will take place will be up you, the participants, and the researcher will help to negotiate times and confirm times. Additionally, you will be required to consult some information on a designated website – this won't be a lot of information – but it will be enough for you to engage in a meaningful discussion with your fellow participants.

So, should you decide you wish to take part, please contact me using the above contact details. To confirm you wish to participate, please complete and sign the participant consent form (below). Should you wish not to take part, I would be very grateful if you could inform me of this.

If you have any queries, please do not hesitate to contact me.

Kind regards,

Simon Williams

Consent Form – Citizens' Participants

You have agreed to take part in an online deliberative exercise called a Citizens' Participatory On-Line Interactive System (Citizens' POLIS). Many thanks for agreeing to participate.

The purpose of the Citizens' POLIS is to see what views members of the public like yourselves have on the issue of M*obile Telephones, Risk and Health* in an informed and deliberative environment. The aim of this research is to engage a small group of citizens, with relevant evidence and information on the issue of M*obile Telephones, Risk and Health*, so that you can offer your informed opinions, views and decisions. The system used here is not dissimilar to that of a 'citizens' jury' (please refer back to your 'Information for Potential Participants' letter.

Please note the following:

1. Participation in this study is voluntary. However, since you will be giving up some of your free time, you will be compensated for your participation. The rate of compensation is £10 per discussion session (each lasting approximately 1.5 hours in length). If you take part in all 5 exercises then you will receive the full compensation of £50.

2. You are free to withdraw your participation at any time. Please note however, that you will only be compensated for each of the full exercises you take part in. (If, for example you miss one of the discussion sessions, then you will be compensated £40 only.)

3. Participation is anonymous. Although the researcher will keep your details for his own records initially for the duration of the study, these will be deleted after the study, and will be anonymised in any published work, or any work in the public sector. As such your details will be kept confidentially. Also, during the online discussion sessions you will be required to sign in with a 'username' (screen name). This will be your anonymised identity – so that the researcher

and only the researcher will be able to identify you. Other participants will not have access to your personal details.

4. The researcher is subject to the full ethical regulations of his/her home department at his/her university. For more details, please see: http://www.cardiff.ac.uk/socsi/research/researchethics/index.html

I, the researcher, agree to compensate the participant with a sum of £10 for each discussion session they participate in, up to a maximum of £50 for five discussion sessions.

Signed

Print Name

I, the participant, agree to take part in this research, and understand that I am expected to take part in 5 online discussion sessions, each lasting approximately 1.5 hours in length (unless there is good reason for not being able to take part in one or more), and understand that I will be compensated for my participation at a rate of £10 per online discussion session, up to a maximum of £50 for all five discussion sessions. I also understand that I am expected to look at and use all the information that the researcher puts on the designated website (http://www.cpolis.co.uk) in order to inform my participation in the discussions.

Signed

Print Name

Appendix F

Sample Selection Grids

Criteria		Target Composition	Actual Composition (prior to drop outs)	Actual Composition (after drop outs)
Gender	Male	6	6	4
	Female	6	6	4
Age	18-24	3	5	4
	25-49	6	5	3
	50+	3	2	1
Education	Compulsory	4	4	1
	Further	4	4	4
	Higher	4	4	3
Nationality	British	9	9	6
	Swedish	3	3	2
Mobile and other technology use	Low	4	4	3
	Moderate	4	4	2
	High	4	4	3

Appendix G:

List of interviewees:

Interviewee A:

Citizens' biographies:

Alanne:

Alanne is female, over 50 with two children over the age of 18. She is British. She is educated to the post-secondary, further education level and has taken early retirement. She likes to take intermittent self-employment opportunities.

She has been using her mobile phone for 10 years or more and her mobile phone use is low – she spends less than one hour a week talking on her mobile. She uses her mobile for emergencies, essential calls and non-essential calls. Her use of other related technologies, such as the internet, is moderate. She is aware that she does live near (within 400 yards) a mobile phone mast

She does not feel she has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. She has had no professional or direct involvement with the mobile telecommunications industry, has not worked in government in a capacity related to this issue, nor has she been involved in any NGO, activism or other public interest activities related to this issue.

cookiemonster (/about2shout):

cookiemonster is female, aged 18-24 and has no children. She is Swedish, but has also lived in the United States and the UK. She is currently a student at university studying psychology, and has a part-time job which doesn't require regular use of a mobile phone.

She has been using her mobile phone for between 1 and 4 years and her mobile phone use is moderate – she spends between 5 and 9 hours a week talking on her mobile. She uses her mobile for emergencies, essential calls and non-essential calls. Her use of other related technologies, such as the internet, is moderate. She is not aware of whether she lives near to a mobile phone mast or not.

She does not feel she has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. She has had no professional or direct involvement with the mobile telecommunications industry, has not worked in government in a capacity related to this issue, nor has she been involved in any NGO, activism or other public interest activities related to this issue.

Dexter (the Blade):

Dexter is male, aged 18-24 and has no children. He is British. He is currently studying medicine at university.

He has been using his mobile phone for between 5-9 years and his mobile phone use is high – he spends more than ten hours a week talking on her mobile. He uses her mobile for emergencies, essential calls and non-essential calls. His use of other related technologies, such as the internet, is high. He does not think that he lives near a mobile phone mast.

He does not feel she has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. He has had no professional or direct involvement with the mobile telecommunications industry, has not worked in government in a capacity related to this issue, nor has he been involved in any NGO, activism or other public interest activities related to this issue.

Evefant:

Evefant is female, aged 18-24 and has no children. She is British. He is currently studying medicine in University.

Se has been using her mobile phone for between 1-4 years and her mobile phone is mobile phone use is moderate – she spends between 1-4 hours a week talking on her mobile. Shee uses her mobile for emergencies, essential calls and non-essential calls. Her use of other related technologies, such as the internet, is moderate. She does not know whether or not she lives near a mobile phone mast.

She does not feel she has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. She has had no professional or direct involvement with the mobile telecommunications industry, has not worked in government in a capacity related to this issue, nor has she been involved in any NGO, activism or other public interest activities related to this issue.

littlered:

littlered is female, aged 18-24 and has no children. She is British. She is currently working as a bartender. She is educated to the further education level.

She has been using her mobile phone for between 1 and 4 years and her mobile phone use is low – she spends less than 1 hour a week talking on her mobile. She uses her mobile for emergencies and essential calls. Her use of other related technologies, such as the internet, is moderate. She is not aware of whether she lives near to a mobile phone mast or not.

She does not feel she has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. She has had no professional or direct involvement with the mobile telecommunications industry, has not

worked in government in a capacity related to this issue, nor has she been involved in any NGO, activism or other public interest activities related to this issue.

lovecraft:

lovecraft is male, aged 25-49 and has children. He is British. He is educated to the post-secondary, further education level. He is currently self-employed and is the director of his own company.

He has been using his mobile phone for 10 years or and his mobile phone use is high – he spends more than 10 hours a week talking on his mobile. He uses his mobile for emergencies, essential calls and non-essential calls. His use of other related technologies, such as the internet, is high. He does not think that he lives near a mobile phone mast.

He does not feel he has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. He has had no professional or direct involvement with the mobile telecommunications industry, has not worked in government in a capacity related to this issue, nor has he been involved in any NGO, activism or other public interest activities related to this issue.

Spike:

Spike is male, aged 25-49 and has no children. He is British. He is educated to the further education, post-secondary level and is currently unemployed.

He has been using his mobile phone for 4-9 years and his mobile phone use is low – he spends less than 1 hour a week talking on his mobile. He uses his mobile for emergencies, essential calls and non-essential calls. His use of other related technologies, such as the internet, is moderate. He does not know whether or not he lives near a mobile phone mast.

He does not feel he has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. He has had no professional or direct involvement with the mobile telecommunications industry, has not worked in government in a capacity related to this issue, nor has he been involved in any NGO, activism or other public interest activities related to this issue.

thfc1:

thfc1 is male, aged 25-49 and has children. He is British. He is educated to the compulsory (secondary) level and is currently employed as a labourer.

He has been using his mobile phone for 10 years or and his mobile phone use is high – he spends more than 10 hours a week talking on his mobile. He uses his mobile for emergencies, essential calls and non-essential calls. His use of other related technologies, such as the internet, is high. He does not know whether or not he lives near a mobile phone mast.

.

He does not feel he has particularly strong views on the issue of whether mobile telecommunications technology has significant effects on health. He has had no professional or direct involvement with the mobile telecommunications industry, has not worked in

government in a capacity related to this issue, nor has he been involved in any NGO, activism or other public interest activities related to this issue.

Appendix G

Sample Interviewee Extracts:

SW: Do you think mobile phone RF can be linked to cancer?

Interviewee G: Our opinion is that for the transmitters, for the base stations, we don't think there are any negative health effects. But for the handsets, we cant say absolutely for sure that there is no risk. We have some studies, from the interphone study that indicate that there could be some risk of acoustic neuroma. So we have actually, we think that the precautionary principle should be applied here. We have a brochure here, that says that you should be a little bit careful when using your phone. You can see that the studies indicate there is possible risk if you have used the phone for more than ten years, but for shorter time spells there is no such indications. But for more than ten years maybe. And then we have said that children and young people should be careful when they use their phones, because they will probably use their phones for a very long time. That's our opinion anyway.

SW: If there is any concern over long time use, but not over short term use – can we elaborate on short-time effects? Specifically the possible effects of RF on DNA?

Interviewee G: Well, we have an international expert group working for us, and they look at the science and all the new studies, and they are of the opinion that it is not – they have what they call key issues, where they talk about hypersensitivity and other things, but their view is that there is no real evidence for DNA effects of low level RF radiation, even thought they are a little bit vague. But on the REFLEX study, because they have seen some effect on the REFLEX study, but they want to see more studies before they give any opinion – but it is a couple of years before the REFLEX study so there have been lots of other studies which do not indicate an effect on the DNA. So it is not really consensus perhaps but they are close to it – that there is no direct DNA effects from low level RF.

SW: What would you like people to know – what is the most important issues for mobile phones and health – what are your experiences?

Interviewee M: I think there is a genetic susceptibility with some families – like my family. My mum has become sensitive – she has been living by a mast. So we went to

great lengths to get her moved, and last year we moved her to this lovely semi-detached, no-where near a mast, but as soon as I got in this house, I thought I could feel the frequencies. And next door had a DECT phone, and I didn't want to tell my mother because i thought Id freak her out, so i thought id have a word with the neighbour instead to ask them to remove it. And so the day my mum moved in, she nearly collapsed in the hotspot – and I told her the neighbour had a DECT phone, and ill ask them to remove it. A lot of people will be like that, they'll be 'oh i don't know what's wrong with me?'

Appendix H

Sample Deliberation (Discussion Session) Extracts

<moderator> would anyone oppose a mast being built near their home?
If so, why/if not, why not?

<lovecraft> on the basis of the current research
no, but I am not a fatalist like some

<cookiemonster1> do they?

<littlered> I wouldn't argue with a mast near me as
long as it weren't in my garden.. and that's
because they're unsightly

<lovecraft> apparently yes

<Evefant> i don't think any of us would move just
because of a mast

<Dexter the Blade> supposedly yeah

<Spike> that is a good question moderator- it is the
NIMBY effect - (Not In My BackYard)

<cookiemonster1> umm, no cuase i think its highly
likely i would adventually move somewhere else
(not specificly for that reason tho)

<lovecraft> but burnt toast and clingfilm are
supposedly carcinogenic and i still use them

<moderator> yes thats right spike

<Dexter the Blade> that's true

<Spike> I think I would probably be able to find a lot more research against masts if there was actually one near me

<alanne> from an aesthetic point of view I would choose to buy where there was not a mast

<Evefant> but i think the mast disguised as a tree was pretty cute though

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<moderator> so .. what does precaution mean to everyone?

<thfc1> it could be anything

<lovecraft> essential calls only, more hands free, limit childrens access, zones around masts

<moderator> thanks lovecraft - anyone else agree?

<thfc1> yes i see and agree with lovecraft to a Extent

<Dexter the Blade> Essential calls only?

<Dexter the Blade> How do you decide the parameters for that?

<moderator> how do you think dexter?

<thfc1> do tell

<lovecraft> this will be harder for those surgically attached to their phones - could be a revolution....

<alanne> previously with Stewart report, just to use commonsense anyway re children, amount of exposure, advice etc but now more needed?

<thfc1> /and more of everything

<lovecraft> public information films, school visits from white cotaed boffins?

<Dexter the Blade> Moderator, I'm not sure that we

could put parameters on definition - it is too difficult

<Evefant> what if you need your phone at work, like to work when you're travelling? that might be essential, making money is essential to many people

<thfc1> of course as i use my phone for work all the time

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A twenty-first century *Citizens' POLIS*:introducing a democratic experiment inelectronic citizen participation in science and technology decision-making

Simon N. Williams

Related to ongoing debates concerning the future of "deliberative democracy" and "public sociology," this article introduces a new approach to citizen participation in science and technology decision-making. The Citizens' POLIS (Participatory On-Line Interactive System) is a multi-method, multi-stage, semi-structured, electronic public participation process. This pragmatic experiment is influenced by the philosophy of John Dewey and James Bohman, and sees the citizen as the primary democratic inquirer and the social scientist as the key organizer and creator of the "institutional space for deliberation." This article discusses the role of the social scientist in organizing an electronic participation experiment, one which seeks to reach a compromise between democratic legitimacy and political effectiveness. A recently completed pilot study on "Mobile Phones, Risk and Health" is used to illustrate the approach. In conclusion, the need for further empirical experimentation with this, and other processes for electronic citizen participation, is asserted.

Keywords: deliberative democracy, public participation, public sociology

1. Introduction: citizen participation and social science

The administration of the Ancient Athenian *polis* (city-state) was founded on the conviction that all citizens should actively participate in its political life. In the twenty-first century, social scientists have made a strong case in favor of a system of political decision-making which, in part at least, resembles the Athenian model (Gibbons et al., 1994). This case is grounded in criticisms of existing "deficit" models of science and technology (S&T) decision-making (Ziman, 1991; Wynne, 1995), and of representative democracy more generally (Dryzek, 2000; Cohen, 1997; Bohman, 1997, 1998). James Bohman (1999) has, via John Dewey, argued that social science and social scientists should play an important role in designing and implementing a

democratic system of deliberative decision-making. This complements recent arguments by Burawoy (2005), who regards new trends in "public sociology" as playing an importantrole in the formation of "new knowledge spaces" (Elliott and Williams, 2008: 1103).

According to Burawoy (2005), it is the task of public sociology to engage multiple publics in multiple ways.

Despite government exhortations in favor of a more participatory system of decision-making (Brown, 2007; House of Lords, 2000), significant problems related to the implementation of citizen participation remain. For instance, whilst those participation processes organized by government, from the "top-down," are seen to lack democratic legitimacy (e.g. Hagendijk and Irwin, 2006), there is little evidence to suggest how participation processes in which citizens play an organizational role (sometimes referred to as "bottom-up"), could be practical or effective (Mort et al., 1999). In addition to this, there is also the consideration that any model of citizen participation in the twenty-first century must take into account the re-defined spatiality of citizenship. In large, complex societies faced with issues of a global nature, a localized "town assemblies" model of participatory democracy is seen to be inadequate (Bohman, 1995).

This article discusses an electronic participation process as an alternative to existingface-to-face participation processes. The *Citizens' Participatory On-Line Interactive System* (*Citizens' POLIS*) is a multi-method, multi-stage and hypermedia participatory process, for S&T decision-making.[1] The second half of this article will describe in detail the stages of the Citizens' POLIS, first theoretically, then empirically through a cursory account of the pilot study for the first Citizens' POLIS—on the issue of "Mobile Phones, Risk and Health."[2] Before doing so however, it is first necessary to briefly discuss the pragmatist underpinnings of the Citizens' POLIS approach, and what implications this has on how participation isconceived and organized.

2. Deliberative democracy and Bohman's pragmatism

The first questions facing any potential model of decision-making are "what makes this model more *legitimate* (i.e. producing decisions in the best possible way) and what makes it more *effective* (i.e. ensuring the best outcomes from the best decisions) than its possible alternatives?" Since the "deliberative turn" (Dryzek, 2000) in the early 1990s, democratic theorists are increasingly revisiting and revising critiques of existing representative systems of decision-making (Barber, 1984; Mansbridge, 1983; Mill, 1892) and are arguing the need for citizen participation and deliberation to supplement (rather than supplant) these systems (Cohen, 1997; Elster, 1997; Young, 2000). Provided it is free, open, equal and cooperative, the process of deliberation, "makes the reasons for a decision more rational and its outcomes more just" (Bohman, 1997: 322). In other words, deliberation can facilitate decisions which are more effective and more legitimate. It should be noted however that some commentators, such as Webler (1995), have warned of the possible tension between these two ideal concepts (or rather his related concepts of "fairness" and "competence"), something that will be discussed later in this article.

Building on the work of John Dewey (1916), James Bohman (1999) has suggested that democracy, as a form of knowledge, is not only participatory but also experimental. Conceived in this way, the legitimacy of a process is grounded in participation, and both legitimacy and effectiveness emerge a posteriori, after the process has taken place. These standards are provisional and adaptive; the more we experiment with participation, the more we learn about what it means to be "legitimate" and "effective." For Bohman (1999) at least, this means a central role for deliberation, so that participation itself becomes a form of social inquiry. In his model, the citizens themselves become the primary "democratic inquirers" (Bohman, 1999). In this

way, citizen participation in decision-making becomes an archetypal "public sociology" as characterized by Burawoy (2005) and as exemplified by others (Elliott and Williams, 2008). The social scientist is entrusted with the job of organizing and facilitating inquiry; they are charged with "creating the institutional space for deliberation" (Bohman, 1999: 601). Though s/he does not directly contribute to the deliberation itself, the social scientist should help to organize where it takes place and how it should proceed. It is they who are responsible for ensuring that all relevant forms of "expert knowledge" are fed into the process, equality of opportunity within deliberation is upheld, and a cooperative approach to inquiry is fostered. Bohman (1996) argues that we cannot do this by aspiring to some abstract notion of an "ideal procedure" (Cohen, 1986) which may be untenable in practice. The preoccupation with an ideal procedure should be replaced with what we might refer to as a "reflexive imperative." This requires the normative framework within which deliberation takes place to be open to challenge and revision according to the public reasons of participants in deliberation (Bohman, 1996). The citizens-as-inquirers are thereby able to question and discuss not only the substantive issues related to policies (actual or potential), but also, and more fundamentally, the very credibility and public accountability of expert knowledge itself (Bohman, 1999). It may be suggested then, that in experimenting with different participation processes which are organized by the social scientist and which emphasize equality and cooperation and which place the task of democratic inquiry firmly in the hands of the citizens themselves, we pragmatically work our way towards a system of decision-making whose *combined* legitimacy and effectiveness is greater than that of its possible alternatives. The remainder of this article will develop these considerations in reference to one such pragmatic experiment: the Citizens' POLIS.

3. Introducing the Citizens' POLIS as an Electronic Participation Experiment

The Citizens' POLIS is influenced by a range of public participation processes, in particular the citizens' jury (Jefferson Center, 2004; Wakeford, 2002) and the planning cell (Dienel, 1999), and to a lesser extent the consensus conference (Guston, 1999). Conceptually, the purpose, rules and structure of engagement are comparable to these existing processes. However, what is different about the Citizens' POLIS, and hence what gives it a unique character, is how these methodological and procedural concepts are combined with a distinct and explicit philosophy (as outlined above), and an innovative approach to the implementation of participation using electronic media (as will be outlined below).

The Citizens' POLIS can be broken down and explained according to a number of stages that constitute it. The five main stages which constitute the Citizens' POLIS are: *the formation of the Ekklesia (Citizens' Assembly), the setting of the agenda, the production of the evidence, the presentation of the evidence* and *the staging of the deliberation.* The remainder of this article will discuss these various stages in detail—theoretically and with empirical reference to the pilot study of the first Citizens' POLIS, on the issue of "Mobile Phones, Risk and Health." First however, it is necessary to include two brief discussions, one on the role of electronic participation and one on the role of the social scientist, since the significance of these two roles will be referred to throughout.

The role of Electronic Participation Experiments

Applying Deweyan terminology, any exploratory procedure of citizen participation wherein the distribution of information and the deliberative interaction are electronically mediated

(i.e. they involve the use of a computer network) could be referred to as an *Electronic Participation Experiment* (EPE). EPEs can be seen to be similar, but not reducible to online versions of traditional face-to-face citizen participation processes.

Rowe and Gammack's (2004) survey of online engagement procedures concluded that as well as there being a number of advantages of electronic participation over its face-to-face equivalent, there are also some disadvantages. For instance, at the same time as electronic participation can reach groups which are traditionally hard to engage, such as young citizens (Shah et al., 2001; Gibson et al., 2005; Forcella, 2006), it can also exclude other groups, such as those who do not have access to the relevant technology. An extensive literature on the use of e-focus groups in social research has suggested that electronic communication more generally has both its advantages and its disadvantages (Murray, 1997; Mann and Stewart, 2000; Rezabek, 2000; Franklin and Lowry, 2001; Seymour, 2001; Stewart and Williams, 2005).

It is clear that EPEs should be thought of as a supplement to, rather than a substitute for, existing face-to-face procedures. It has been suggested that the anonymity and spatial distanciation characteristic of electronic communication lead to disadvantages such as a lack of trust, less responsiveness, the attenuation of (non-linguistic) social cues and an increased group polarization (Stewart and Williams, 2005). However, it is possible to look at these same features in a more positive light. Instead of trust being seen as something which is physically embodied, trust can be seen as something which is fostered by a shared commitment to citizenship and which emerges through the act of participation per se (whether this is online or offline). Moreover, the "disembodied" nature of electronic communication allows for arguments to be more considered, which in turn allows greater time for greater reasoning. Similarly, the anonymity conferred by electronic participation can allow for greater "social equalization." Bio-social characteristics such as ethnicity and gender are attenuated or eliminated in a deliberation in which interaction takes place via the exchange of text-based messages. Also, the anonymity of electronic interaction encourages some to be more candid and those who are less confident in face-to-face communication might more readily find "voice" in the deliberative exchange (Stewart and Williams, 2005). This allows us to suggest that electronic communication has the potential to facilitate deliberation which is freer, more open, and more equal than its face-to-face equivalent—criteria which are at the heart of any conception of deliberative democracy (e.g. Cohen, 1986; Rawls, 1993; Bohman and Rehg, 1997). Indeed, seeing electronic deliberation in such a way lends itself to a conception of these electronic participation experiments as constituting a modernized and cosmopolitan public sphere (Gimmler, 2001; Bohman, 2004). Of course, the main advantage of an EPE over a face-to-face participation procedure is that it is far more economically efficient, and far more convenient to undertake. Whilst the traditional citizens' jury can cost thousands of dollars (Jefferson Center, 2004), the running costs of conducting a procedure online are comparatively negligible. Finally, in a late modernity, where risks are increasingly of a globalized nature, the need for international deliberation is increasingly imperative (Giddens, 1991; Beck, 1992, 2006). Such global communication is more easily facilitated across an electronic Cosmo(Polis). Theoretically then, we can postulate that EPEs *could* be more legitimate than face-to-face equivalents. Whether they are, and whether their outcomes are more effective is something which cannot be ascertained in the absence of empirical data.

The role of the social scientist

The Citizens' POLIS as an EPE could, in practice, be adapted and utilized by external sponsors. Also, it could be a convenient and practical template tool for citizens to organize their

own "bottom-up" or "Do-It-Yourself" participation (e.g. PEALS, 2004). Whilst there is much theoretical weight behind the argument that, from a democratic point of view, citizens should be given as much control as possible over the organization of an exercise in which they take part (Webler, 1995; Pickard, 1998; Hagendijk and Irwin, 2006), in practice, it is questionable as to how feasible this is (Davies et al., 2003). With notable exceptions aside (PEALS, 2004), "bottom-up" citizen participation has proved to be easier said than done, since compared to the body of theoretical work, rather less empirical work exists to show how this could be achieved practically (Mort et al., 1999: 103). Taking Bohman's view of the citizen-as-inquirer, we could argue that taking the bulk of responsibility for procedural organization out of their hands, allows for the citizens to focus on the (deliberative) democratic inquiry itself. Also, there have been a number of problems identified in those participation exercises which are government-organized. Largely, concern is directed towards the fact that government-initiated engagement processes are "always affected by the interests of those in power" (Dahlberg, 2001: 619) and are likely to impose "narrow," "pre-existing" frames and constraints on the exercise (Grove-White, 2001; Irwin, 2001; Hagendijk and Irwin, 2006). As such, a "shadow of control" is seen to loom over the deliberation process (Wright, 2006). Such problems add substance to Bohman's claim (discussed above) that the task of organizing participation experiments should be entrusted to the social scientist. Social scientists are expert in the study of social interaction (Jasanoff, 2003), are usually well informed about the substantive area of interest (e.g. debates over climate change, genetically modified organisms or mobile phone radiation), but importantly, do not have as direct (and material) a stake in the proceedings of the participation experiment as might those working for or in government.[3] Whilst the majority of social scientists would not claim to be entirely objective, their involvement in the issue itself is only indirect, and reflexivity is increasingly a requisite praxis within social research.[4]

Claiming independent status for the social scientist is of course a statement which is open to challenge. However, if we are to think of the legitimacy of a participation experiment in these terms, the notion of a relative scale is more appropriate. The social scientist working within an academic environment (and funded by an independent research council) could make a *more* genuine and demonstrable claim to be without conflict of interest, than could a social scientist working within or for a sponsoring agency (i.e. one which is itself involved in or related to, the issue at stake).[5] In this way, a participation experiment can more readily meet Rowe and Frewer's (2000: 13–14) "acceptance criterion of independence." This independence does however raise issues in regard to the potential effectiveness of decisions. Here, concern rests not so much with whether or not the decisions are "good," but rather with whether or not they will be acted upon. In this respect, meeting Rowe and Frewer's (2000: 14–15) "acceptance criterion of influence" is arguably more problematic. Although having decisions generated by (government-)sponsored participation processes does not guarantee any action (indeed this is a criticism waged by science and technology studies (STS) scholars, e.g. Rowe and Frewer, 2000: 10), it is arguable that the outputs of independently organized participation experiments are even less likely to become implemented as policy or practice. Nevertheless, the social scientist's experience of disseminating his or her research and of working *with* rather than *for*, relevant official agencies allows us to argue that participation experiments organized by them are likely to be more effective (i.e. more influential) than those organized entirely by citizens.

Webler (1995) has noted that the appeal a participation process makes to the standard of fairness can be at the expense of the appeal it makes to the standard of competence, and vice versa. As suggested above, what a citizen-led process might possess in the way of (democratic) legitimacy, it lacks in the way of (instrumental) effectiveness. Conversely, what a government-led process might possess in the way of effectiveness, it lacks in the way of

legitimacy. The Citizens' POLIS claims to be neither fully democratically legitimate nor fully instrumentally effective, in accordance with ideal theorizations of these standards. Participation in the Citizens' POLIS is not simply an end in itself, but is also a genuine means by which to determine ends. As a pragmatic model for citizen participation, it aims towards a "trade-off"—a realistic compromise—between legitimacy and effectiveness; between fairness and competence. The role of the social scientist is key to the facilitation of this compromise. In creating the institutional space for deliberation (in this case, the Citizens' POLIS itself), the social scientist can, from a relatively neutral position, organize a participation experiment which is more legitimate than government-led processes and more effective than citizen-led processes. In this way, "public sociology" in the context of S&T decision-making can be complimented by a "professional sociology" (Burawoy, 2005). It is acknowledged however, that the ability of a participation experiment to generate action is something which can only be guaranteed once a model of decision-making such as the one outlined in this article is appreciated—but not assimilated or asphyxiated—by the political powers-that-be. In the meanwhile, surely a struggle towards a truly legitimate system in which decisions are made genuinely by citizens is preferable to a convenient and tokenistic system in which predetermined decisions are simply "rubber-stamped"?

Stage 1: the formation of the Ekklesia (sampling)

In the *polis*, local citizens would meet in an *Ekklesia*, or assembly, in order to conduct their deliberations and pass their decisions of matters of local political affairs. In the Citizens' POLIS, although there need be no fixed number of participants, based on existing examples of participation processes, a number in the range 8–20 is desirable. Given that the quality of deliberation rests on participants having sufficient and equal opportunity to put forward their views, having any larger a number could prove counterproductive. It is usually taken as given that the citizen participants in deliberative processes should be recruited through random-stratified sampling. This method of sampling divides the defined population (of a town, country etc.) into quotas, using a set of chosen criteria, before employing a market research or surveying company to select random individuals from within these quotas (e.g. Jefferson Center, 2004). Usually, common demographic categories, such as gender, ethnicity, age and educational status are used. However, this procedure is expensive and is concerned primarily with the attempt to achieve representativeness. It is certainly not essential for a public participation experiment to use this method.[6] Smith and Wales (2000: 57) have suggested that random-stratified sampling can "undermine the democratic ideal of the inclusive jury [or related participation exercise]." Also, problems sometimes arise over obtaining the information needed for valid randomisation, and as such, non-probabilistic stratified sampling may be just as appropriate. The question of whether a citizen participation process should appeal to representativeness is grounded in wider questions of methodology, and wider still, of epistemology. In other words, the researcher's sampling strategy relates to whether they believe that the methods used can allow for generalizations to be made from a sample and the population from which it is drawn, and indeed, whether we should even categorize society in terms of a number of fixed and homogeneous groups or categories (such as ethnicity or employment status etc.). Recruitment of citizens in the Citizens' POLIS is amenable to a variety of sampling techniques, and thus the choice of method will depend largely on the researcher's epistemological orientation, in addition to the usual practical concerns of time and cost.

Although the full-scale Citizens' POLIS on "Mobile Phones, Risk and Health" will use a form of non-random stratified sampling, for the pilot Citizens' POLIS on "Mobile Phones,

Risk and Health," opportunity sampling was used. This was used due to it being the quickest and most convenient sampling technique. Given that the Citizens' POLIS is an EPE and that deliberation would take place online, it was felt that using online recruitment methods was appropriate. Adverts were placed on a social networking site, requesting volunteers for the study. The obvious shortfall of this non-random technique was that those taking part would in some way, directly or indirectly, know the researcher, and possibly each other (such sites are online "social utilities" where existing real-life contacts can communicate electronically). The full-scale experiment will use a more general form of online advertising, whereby it is likely that those responding will not know the researcher or one another. However, for the purposes of a pilot, which the researcher hoped would merely test the logistics of the system as well as offer some early insight into its usefulness as a participation experiment, it was felt that opportunity sampling was satisfactory.[7]

Stage 2: setting the agenda

One of the most important elements in the organization of any participation experiment is the setting of the agenda. There are seen to be a number of ways through which an agenda can be set. The steering groups used by traditional citizens' juries for example, usually set the agenda based on their collective technical knowledge of the issue. There are however, questions concerning whether the agenda is fair and balanced, given that this would, at least partly, depend on the composition of the steering group—i.e. what type of experts are used, from what stakeholder groups they are drawn, and indeed whether all stakeholder views are represented.[8] Referring to Bohman (1999) however, we could argue that it is the social scientist's responsibility to establish the agenda. How then might this be done in practice? The agenda in the Citizens' POLIS is analogous to the framing or "mapping" performed at the beginning of most social research projects. That is, through his or her "background research", the social scientist becomes familiar with their substantive field of study, and with the salient themes, positions and arguments within it. In the current context, such mapping can be used to help set the agenda of a Citizens' POLIS. By reviewing the existing literature on the particular field of study, the social scientist can derive an overview of the issue at stake. Given that the social scientist is, as suggested above, involved only indirectly in the substantive issue per se, in theory an agenda set by them will be derived from a less partisan, and thus fairer, review of the literature.

In keeping with its pragmatist philosophy, the agenda in the Citizens' POLIS is provisional and adaptive, being subject to modification throughout the experiment. In this respect it is comparable to the agenda in a citizens' jury (Jefferson Center, 2004). Changes to the agenda can be made by the social scientist during their subsequent gathering of evidence. Also, the Citizens' POLIS should allow room for the citizens themselves to challenge the agenda during the course of deliberation, in accordance with the "reflexive imperative." As they become more familiar with the issue(s) at stake, citizens become increasingly qualified to determine what is more or less relevant and important to the deliberation. As such, the social scientist's review of the subject is itself not exempt from challenge and change. Building an element of reflexivity into a participation experiment caters for the inherent unpredictability of the processes of knowledge production and social interaction which are characteristic of all deliberative procedures. Assumptions, understandings and knowledge of a subject can, and most often will, change dramatically during the course of data collection and analysis. In the Citizens' POLIS therefore, the agenda can, and in many cases will, be adjusted (to varying degrees) following the first phase of the system. Horlick-Jones et al. (2007) have referred to this property—where one stage of engagement can inform and shape

the next stage—as the "translation quality" of a procedure. Furthermore, allowing citizens a say in the direction of deliberation enhances the democratic legitimacy of the experiment.

In the Citizens' POLIS on "Mobile Phones, Risk and Health," the social scientist is responsible for setting the initial agenda. Following a review of the literature on the subject, the substantive area has been categorized or mapped. The following themes have been highlighted as most prominent within the overall debate: "the biology of mobile phone use," "base stations and residential risk," "cancer and concern," the "contested nature of electro-sensitivity" and the "precautionary principle." Although the researcher's knowledge and understanding of the issue will no doubt change as the evidence is collected and analyzed, these five themes will form the provisional agenda. One theme—"base stations and residential risk"—was chosen arbitrarily by the researcher to serve the pilot study.

Stage 3: producing the evidence (evidence content)

Once the provisional agenda has been set, the social scientist must then produce evidence related to this agenda which s/he will then present to the *Ekklesia*. The evidence is largely derived from scientific, technical and political sources, and is acquired via the methods of data collection which are familiar to most social scientists, and are particularly common within STS. Interviews with key stakeholders (scientists for example), document analysis (of scientific or policy literature for example), narratives and oral histories (of those affected by, or directly at risk from, the issue(s) in question) and audio-visual data (news reports or documentaries for example) as well as surveys and other statistical data where appropriate, can all be seen as possible data which can constitute the evidence base for the citizens' analyses and deliberations. In face-to-face participation processes, evidence usually takes the form of expert "testimony." Experts either are interviewed in front of the citizens by an independent third party (or they might be cross-interviewed by two protagonists—analogous to the cross-examination of evidence in a legal jury), or they are asked to give a straight presentation about their knowledge or experience.

The production of evidence in the Citizens' POLIS, though comparable to related face-to-face processes in many respects, also differs in a couple of important ways. Firstly, as with the agenda, citizens are actively encouraged to adapt the evidence base for deliberation in accordance with their increasing engagement with the substantive area—more so than in most participation processes. The material provided by the social scientist is intended to be a rounded evidence base upon which further self-directed citizen inquiry can proceed. Citizens are encouraged to seek out evidence themselves which they can share with one another, and which will supplement and augment that which has already been provided by the organizer. This is seen to extend their analyses of initial evidence, in that further inquiry proceeds based on the citizens' assessments of the usefulness, significance and trustworthiness of different types and sources of evidence.[9] Secondly, in the Citizens' POLIS, attention needs to be paid to the fact that evidence must be presented online, in electronic format (see *Stage 4*, below). The Citizens' POLIS, like the face-to-face processes, largely relies on interview and narrative data, with relevant documents being used to supplement these data. Ultimately, the methods for data collection are at the discretion of the social scientist and may depend on the specific issue at stake. In this respect, choices related to evidence production in the Citizens' POLIS are comparable to choices which must be made in all social research projects. However, where the Citizens' POLIS (and citizen participation processes in general), differ(s) from more conventional social research, is that in the latter, the researcher's analysis of the data is usually the primary focus, whilst in the former, the citizens' analysis as social inquirers is the

primary focus. However, how raw data become "expert evidence" in the first place is a process in itself, and it is in this process the social scientist plays a central role.

Converting raw data into workable evidence via an editing process is necessary because it enhances the efficiency of participation. Although it might be argued that it is preferable to ensure that the data are subject to as little moderation or editing as possible, in practice, this is rather infeasible. For instance, it could scarcely be assumed that citizens—particularly where their participation is voluntary (but even where they are paid a moderate honorarium)—would be prepared to read through hundreds of pages of documents or interview transcripts, listen to hours of audio files or watch hours of video footage. Given that it is not possible to know everything, we must work instead with "what is reasonably knowable" (Webler, 1995: 58). In the Citizens' POLIS, as in any piece of social research, it is likely that initial data collection leaves the social scientist with a "surplus" of data—some of which are sufficiently tangential to the specific issue under inquiry so as to be considered irrelevant to the purposes of that particular piece of research. Thus the social scientist organizing a Citizens' POLIS, like any social scientist, must analyze their data, decide what is relevant and what is not to the purpose(s) of their particular project and "prune" or edit their data accordingly. Lengthy narratives, interview transcripts, audio interviews, video interviews and documents must all be edited significantly so as to ensure that the work being asked of the *Ekklesia* is commensurate with the remuneration (or lack thereof) which they are receiving for their participation. Whilst from a purely democratic perspective, we could argue that citizens have the ability to decide for themselves what is relevant or not, and should therefore be allowed to exercise this, this is infeasible because of the time and commitment required to do so. It should be reiterated that as they proceed through the evidence, citizens are encouraged to seek additional evidence themselves. However, through editing vast amounts of information, the social scientist allows the citizens to firstly focus on a narrower set of data, which they can then analyze and discuss in more depth.

It is also possible to re-invoke the argument that the social scientist is the best placed for organization of the Citizens' POLIS, in order to suggest that s/he is better placed to choose and edit data—i.e. to produce evidence—for the citizens, than is the government-sponsored researcher. The social scientist's relative neutrality allows them to account for all the relevant views and positions in a given debate, so that the citizens can make an informed decision and not be influenced by a weighting of the evidence in favor of a particular position (see for example, Irwin, 2006). However, despite their relative neutrality, it is important that the social scientist takes additional steps to ensure that editorial bias is minimized as far as possible. The most straightforward way of doing so is to send the edited data back to their author (e.g. to the interviewee) so that the author can read, hear or view them, and decide whether they are still satisfactorily representative of his or her viewpoint(s). Any comments can then be sent back to the social scientist in order for the edited version to be amended accordingly if necessary (by re-inserting or substituting data extracts for example). This process can be repeated until both the social scientist and the interviewee/author are satisfied with a final piece of "expert evidence."

Evidence for the pilot study for the Citizens' POLIS on "Mobile Phones, Risk and Health" was drawn largely from interview data. A handful of pilot interviews with stakeholders on the issue of "base stations and residential risk" were undertaken to provide data for this exercise. Also, stakeholder websites were used to provide additional information. In the full-scale Citizens' POLIS, a range of in-depth interviews will be supplemented with multimedia documents—in the form of text, image and audio and visual data. Interviewees have been identified via the background research completed during *Stage 1* (above). In order for the account of the debate to be well-rounded, interviewees are being sought from the four main

stakeholder groups: radiation regulatory authorities, scientists, the mobile phone industry and anti-mobile phone activists. Two interviews from each stakeholder group are to be conducted. This is deemed sufficient since it is felt that having *too much* evidence from too many experts might dissuade potential participants.[10] Interviewees are thus recruited according to a quota system. Once two experts from each stakeholder category have been interviewed no more interviews from this category will be sought. Interviews are to be conducted face-to-face, via the telephone, or electronically via asynchronous online communication. Documentary data will come from a variety of media, including: (.pdf) downloads; (.jpeg) digital images; (.mp3) audio files; and digital video clips. These multimedia data are to be taken from a wide variety of sources, including: stakeholder websites; e-newsletters; stakeholder DVDs; podcasts; and video-sharing websites.[11] The data will then be edited through a general qualitative analysis approach: the interview transcripts and the documents are analyzed, and the salient themes and categories identified. Information not deemed analytically salient is omitted and information related to those themes and categories deemed salient is included as concisely as possible. The edited versions of the transcripts are then sent back to the interviewees via e-mail, for them to be checked. With the pilot interviews, minor revisions aside, most experts were satisfied that the editing process had not served to misrepresent their viewpoints and arguments (although this may not be the case for the editing processes in the full-scale experiment or in future Citizens' POLISs).

Stage 4: presenting the evidence (evidence format)

For the Citizens' POLIS to make full use of the technology available to it—and to e-participation and e-democracy more generally—then a *hypermedia* approach is preferable. This argument draws on the work of Dicks et al. (2005, 2006) on multimodal epistemology and hypermedia methodology. If we are to agree with Dicks et al. that combining different media within a hypermedia environment can produce a richer and fuller representation of the complex and multidimensional nature of social interaction then we can argue that doing so for an EPE can enhance its quality. If different media can have different meanings, and if combining these media together in a hypermedia environment can produce still other meanings, then the citizens themselves are arguably capable of producing richer, fuller understandings of the evidence in this way, than if they were to be presented with it across a single medium or across multiple but disparate media.

The Citizens' POLIS then, presents and links together the different forms of data—interview, narrative, document and audio-visual—via a *hypermedia system.* The obvious way of doing so practically, is through the use of a specially constructed website, which would enable the various sources of expert evidence to be linked together to the same location. For example, if the social scientist has largely produced evidence by conducting interviews and editing the interview transcripts, then the edited version of the transcript can either be copied on to a web page of that website, or be saved in a text file and linked to it. Similarly, if the interview is in either audio or video format, then the relevant file—mp3 or wmp for example—can be embedded in, or linked to, that website. Also images could be used, if desired, again by being copied into or linked to the relevant web page. The use of hypermedia as a tool for citizen participation offers the social scientist numerous options for presenting and connecting their evidence across a variety of media. In the Citizens' POLIS, the "institutional space for deliberation" to which Bohman (1999: 601) refers, is a virtual (rather than actual) space, enabled by the use of a hypermedia system. The advantage of presenting the evidence using a single, connected virtual space is that it enhances participatory efficiency. It is possible of course to

present the evidence in other ways—for example by sending it via e-mail attachment or on CD/DVD. This however, is less efficient and less interactive than the use of hypermedia.

Whilst the Citizens' POLIS must rely on remote means of evidence presentation, it should be noted that it would not be impossible for some evidence—namely audio-visual interviews or narratives—to be conducted online in real-time. The use of videoconferencing groupware for example, could allow citizens to see and hear the experts present or be interviewed live. This would allow the citizens to also take into account their responses to live, on-the-spot questioning. Whilst some might suggest that videoconferencing would be the best means of conducting an online participation experiment (because it is more resonant still of face-to-face interaction), this may not be the case for a number of reasons. Firstly, from a practical point of view, this is more difficult to organize and use and is more expensive to implement.[12] Secondly, it would require the experts to consent to being identified by the *Ekklesia*.[13] Thirdly (as discussed above), there are some advantages to be had from being able to combine as many media as possible in a hypermedia environment and not to rely simply on one multimedia method of presentation.[14] Finally (as discussed above), the anonymity conferred by non-videoconference electronic message-based interaction can be seen to have a positive effect on deliberation, in that it can encourage deliberants to be more open, vocal and candid than they might otherwise have been.

In the pilot study for the Citizens' POLIS on "Mobile Phones, Risk and Health" evidence was presented using a specially constructed website. Via links on the website's homepage, members of the *Ekklesia* were able to access all the initial evidence. In the full-scale experiment, the citizens will be required to analyze all the evidence, split into sections according to the five substantive sub-areas (see *Stage 2* above). The five substantive areas each have their own designated web page, each of which contains hyperlinks to evidence documents in text, audio, image and video format. The citizens are able to access the information whenever they wish and as many times as they need, which is another advantage of presenting the evidence in this way. Usually, in a citizens' jury (and other face-to-face participation procedures), citizens only get one opportunity to hear or see evidence, which means that some information could be missed simply due to a lack of concentration, or the failure to hear or see a certain piece of information, at certain points during the process. The citizens in the pilot study (as will be the case in the full-scale experiment) were asked to visit the website in their own time, and consult and analyze the evidence with a view to later deliberating on it with their fellow citizens.

Stage 5: staging the deliberation

In the Citizens' POLIS, deliberation takes place both synchronously and asynchronously. Asynchronous interaction takes place via a "discussion forum." This is where users "post" messages at a given point in time, which can then be received by other users at a future point in time (depending on when they next visit that forum). These can be readily obtained from the Internet, either at a small cost or free of charge, and can be linked to, or "embedded" into, the host website. Synchronous interaction takes place when two or more users can exchange messages as a collective, in real-time, as they type corresponding messages into their computers. So, one user can type and send a message, which is immediately received by other users, who can then, should they choose to, send an immediate response. One way to operationalize this in the Citizens' POLIS is for the researcher to make use of existing Instant Messaging (IM) clients which are popular (though mainly amongst younger members of the public), free to download and very straightforward to use. Another, more efficient way to achieve

synchronous interaction is via the use of a designated "chat room," which again can be obtained freely or cheaply from the Internet, and which can be linked to, or embedded into, the host website.[15]

Whilst it is possible to conduct the deliberation solely using a discussion forum—indeed the majority of online deliberative fora are asynchronous (Wright, 2006)—there would be some drawbacks in doing so. There is a growing body of research on the use of online focus groups in social research which compares the relative advantages and disadvantages of synchronous and asynchronous versions of this method (Murray, 1997; Mann and Stewart, 2000; Rezabek, 2000; Franklin and Lowry, 2001; Seymour, 2001; Stewart and Williams, 2005). The general conclusion is that synchronous online interaction is more resonant of face-to-face interaction than asynchronous forms, and as such is more akin to "real" discussion.

Synchronous interaction allows us to reproduce the heightened sense of immediacy and group dynamics of face-to-face interaction (Stewart and Williams, 2005: 405). This is desirable if we are to see openness and cooperation as being key characteristics of deliberation (Bohman, 1999). The immediacy of synchronous interaction can facilitate a more "shared" (i.e. cooperative) electronic environment than can asynchronous interaction, and the former arguably encourages participants to be less individualist, more reactive and more candid than in the latter. Also, some chat rooms and IM clients often include in them a feature which tells the other users that a given user is sending a message. In this way, synchronous online communication can resemble the "turn-taking" characteristic of face-to-face interaction. In such a way, it is possible for group discussion to proceed in an immediate yet orderly fashion. In the Citizens' POLIS then, the bulk of deliberation preferably takes place synchronously. The length and structure of the synchronous interaction however, will depend largely on the scope of the agenda and the breadth of the issue(s) in question.[16] For instance, a very broad issue, such as the ethics of genetic modification would arguably warrant more time for deliberation than a narrower issue, such as those related to local town or city planning. The latter for instance, might only require a one-off, hour-long deliberation session, whilst the former might require a series of related but separate hour-long deliberation sessions, each of which focuses on a particular sub-issue.[17]

Asynchronous interaction also has a place in the Citizens' POLIS primarily as a reflexive tool—i.e. a means of fostering citizen input into the experiment per se. For instance, the discussion forum could allow the citizens to post questions which could then be answered by the experts (either directly or via the researcher), or to make ad hoc suggestions regarding the agenda and how it might be adapted. Moreover, it could act as a medium through which people could voice general thoughts and opinions which they felt could not wait until the next scheduled synchronous discussion (or which they felt could inform it). Asynchronous interaction can also act as a good counterpoint to the immediacy characteristic of synchronous interaction, since the former is generally seen to be more "considered" (Stewart and Williams, 2005) than the latter. Using a combination of synchronous and asynchronous interaction allows deliberation in the Citizens' POLIS to be cooperative, instinctive and open yet also considered and reflexive.

Deliberation in the pilot study took place predominately via synchronous means. Participants were given the opportunity to communicate asynchronously via an online forum, although since this was a one-off experiment, the use of this forum was limited to asking questions about, and offering instruction on, the process itself—in order to establish the main synchronous communication. Via the use of a chat room embedded in the website, the citizens were asked to discuss the issue of "base stations and residential risk," the outcomes of which are summarized below.[18] Deliberation lasted approximately two hours. All participants were

actively involved, passed their own comments and replied to the comments of others in the chat room.

In the full-scale Citizens' POLIS, the asynchronous forum will be used throughout, so that participants can post comments before, after and between synchronous communications. The synchronous interaction will be divided into a number of different sections, based on the agenda's different (sub-)issues. After each individual sub-issue has been discussed (and the outputs recorded), the *Ekklesia* will be encouraged to post any additional thoughts and questions which arise subsequently on the message forum. After all five sub-issues have been discussed any posted questions will be sent to the relevant experts, who will then have the chance to respond. In keeping with the reflexive imperative, the purpose of this question and answer option is to further allow the citizens to explore the type(s) and source(s) of information which they deem significant and which they would like to receive more of. Arguably, the citizens would be neither sufficiently knowledgeable on, nor sufficiently engaged with, the issue before the deliberation has begun. It is more likely that requests for further evidence and questions regarding existing evidence will be forthcoming if the opportunity to do so is built into the structure of the process itself.

4. Conclusion: making the decision(s)

This article has sought to introduce the Citizens' POLIS as an Electronic Participation Experiment. Applying the theoretical arguments of James Bohman, the Citizens' POLIS, it has been argued sees the independent social scientist to play a key role in the design, organization and implementation of the experiment, and the citizens themselves as the principal social (democratic) inquirers. In this sense, professional and public sociologies can be reconciled, joined perhaps by an interdisciplinary "umbilical chord" (Burawoy, 2005: 259).

The structure of the Citizens' POLIS has been outlined, with the five main stages each being discussed in turn. The pilot study of a Citizens' POLIS on "Mobile Phones, Risk and Health" has been used to elucidate this structure. Despite the need for structure, it has been argued that the Citizens' POLIS, like any practical participation procedure, should also have a reflexive imperative built into it. This is so that the citizens, as well as having their say on the substantive issue itself, can also help to determine the terms of their deliberation (they can have their say over how they say what they say—so to speak!). Ultimately, the Citizens' POLIS is an adaptive and pragmatic experiment within which theories of electronic and deliberative democracy are reconciled.

The conclusion of this article, like the conclusion of the Citizens' POLIS, necessarily turns to the issue of decision-making: what are decisions and how are they reached? The answer to the second of these two questions lies in deliberation itself. Decisions cannot be reached without adequately organized democratic deliberation. However, the answer to the first of these questions also lies in deliberation itself, or specifically in the pragmatist conception of deliberation. That is, what makes a decision, and whether it is effective or not, can only be ascertained post hoc, after deliberation has occurred. The preceding four stages are organized in such a way that citizens are as much encouraged to frame (i.e. open up) new decisions for themselves as they are required to decide on questions or options pre-set by the researcher. As such, it is not possible to offer any generalized definition of "a good decision" or indeed of "a decision" per se. Turning to the example of the pilot study, the *Ekklesia* decided that on the whole they were not concerned by mobile phone masts given they felt

these posed little "real" risk to health (although a couple of citizens did point out that they would be concerned were there a mast "in my back yard"). As such, it was decided that existing regulatory guidance was sufficient and that from the money made available (by government and the industry) for research into the field of mobile phones, risk and health, the specific issue of "base stations and residential risk" did not warrant any further investment. In this instance then, the decision made was that no course of action need be taken. However, more empirical research is needed to further appreciate the dynamics of the decision-making processes within the Citizens' POLIS. The Citizens' POLIS is a response to the need for practical participation; theoretically grounded but empirically driven. The full extent to which it is more legitimate than government-led participation processes and more effective than citizen-led participation processes, can only be ascertained cumulatively and experimentally in the face of a body of empirical research.

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Notes

1 Although the process has been designed using (in part) STS literature, with S&T issues in mind, it could be amenable to a decision-making across a wider range of subject areas.

2 The purpose of empirical discussion in this article is largely to illustrate methodological choices rather than to evaluate the outcome of the process. The pilot is being followed up with a "full-scale" Citizens' POLIS. Future publications related to this, will address also the outcomes of the process as well as the methods used in the process itself. The author wishes to point out also that the research was carried out with the greatly appreciated assistance of Research Council studentship, although no external agency has directly sponsored the project *per se*. It has therefore not been in any way directed, shaped or influenced by any external agencies, and has been conceived of and organized by the researcher only.

3 As such, it is argued that they are better suited to this task than independent consultants or facilitators who might otherwise be employed for this task but who would possess less expertise in social interaction for instance.

4 Naturally, motives such as academic recognition and the desire to appeal to relevant audiences would no doubt play some part in organizational decisions. However, it is arguable that such motives are far less significant and potentially detrimental than the more economic or personal motives displayed by direct stakeholders.

5 The relative independence of the academic social scientist then could be demonstrable to stakeholders, participants and audiences alike, through the use of declaration of conflict of interest forms, which are already common praxis within academia more generally.

6 Indeed, given that deliberative democracy sees itself as an alternative to more established representative (majoritarian) democratic models (see Section 2, above), it does seem odd that representativeness *within* deliberative processes is *so* commonly advocated. This however, could be largely due to the fact that the assurance of representativeness makes a process more appealing to (potential) sponsors.

7 It should be noted that all but one of the participants were not direct contacts of the researcher, but were indirect "contacts of contacts" so to speak.

8 Questions are also raised as to which experts should be used for providing evidence and which should be used to form the steering group—and indeed whether these roles are mutually exclusive.

9 Of course, there are many issues which arise here, which are too numerous to address in this article, but which will be done so upon the completion of the full-scale Citizens' POLIS. It is foreseen that issues such as the effect of new, self-directed inquiry on the overall symmetry of the evidence base, the unequal distribution of research and "net skills" between citizens, and the need for the recording and auditing of "new" evidence (as found by the citizens) sources, will need to be addressed.

10 The only exception is the "scientist" category. It is felt that more interviews are needed here due to the fact that in this category, unlike in the others, opinion is internally polarized. As such, the researcher is planning on using

four scientists: two who argue that there are adverse health effects associated with mobile phones, and two who argue there is no evidence to suggest that this is the case.

11 Whilst the bulk of these data are public access, some are private access, and consent will need to be sought from the owners before they can be used in the research.

12 Live presentation, unlike a prior interview with the social scientist, would require the citizens *and* the experts to be available at certain times, instead of only requiring the citizens' assembly to convene at certain times. It is even more unrealistic where compensation for loss of earnings or honoraria either cannot be offered, or can only be offered in moderation.

13 More often than not in social science research guaranteeing participants anonymity is an imperative ethical requirement, and is frequently key to securing participants' consent.

14 Of course, we can still link or embed *pre-recorded* audio-visual interviews/presentations to a hypermediasystem—and this can allow for non-verbal forms of communication (e.g. expression, body language) to be taken into account. It should, however, be considered *one* amongst a number of ways of presenting evidence.

15 It should be noted also, that most discussion fora and chat rooms include a security option, which can allow the creator (i.e. the researcher) to control who can(not) access them.

16 It should be noted however—from a practical point of view—that facilitating multinational deliberations where citizens are participating across different time zones, may not be a straightforward task. In such cases, the need for asynchronous communication may take on more significance.

17 Each synchronous deliberation session would need to be scheduled so that each participant could be available and online at the same time.

18 These will be discussed in more length in future disseminations focused more on the outcomes than the methods.

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Author

Simon Williams is Ph.D. Researcher at Cardiff Institute for Society, Health and Ethics, Cardiff University. His research interests are located within the field of public engagement with science and technology decision-making. Theoretically, he is influenced by broader themes within Science and Technology Studies and deliberative democracy. Substantively,he is looking at issues related to wireless communication technologies, risk and health. Correspondence: Cardiff Institute for Society, Health and Ethics, 53 Park Place, Cardiff University, Cardiff, CF10 3AT, UK; e-mail: williamssn1@cf.ac.uk